



Professor Mohamed A. Abdel-Aty
Pegasus Professor and Chair
University of Central Florida
USA



Office of the Dean

Michael Georgopoulos, PhD
Dean

College of Engineering and Computer Science

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October 25, 2021

World Cultural Council

Dear Colleagues

It is my pleasure to nominate Dr. Mohamed Abdel-Aty for the World Award of Science. I have had the honor of working with Dr. Aty for almost 27 years first as colleagues at the University of Central Florida (UCF) and now as the Dean of the College of Engineering and Computer Science, where Dr. Aty is serving since 2013 as the Chair of the Department of Civil, Environmental and Construction Engineering. Dr. Aty has long history of significant and outstanding contributions to research and education in transportation science.

In addition, Dr. Aty is a Trustee Chair. He is leading the Future City initiative at UCF, is the director of the Smart and Safe Transportation Lab, the Winner of the USDOT Solving for Safety Challenge, and introduced in 2019 the first MS degree in Smart Cities in Engineering in the US. In 2015, he was awarded the Pegasus Professorship, the highest honor at UCF. He was the 2007 UCF Outstanding Graduate Teacher and the 2003 UCF Distinguished Researcher. He has supervised to completion 35 PhD and 60 MS students and is currently advancing 18 more PhD students. His students received twice the best University PhD dissertation, and once the best MS thesis, and the Milton Pikarsky Memorial Award for the best Master's thesis in the field of science and technology in transportation studies (Council of University Transportation Centers), 2019. Under Dr. Aty's leadership, UCF Transportation Science and Technology has increased its' ranking to 29th in the world and 5th in the US.

Dr. Aty is a member of the Academy of Science, Engineering and Medicine of Florida (ASEMFL). He is an Associate Editor for the ASCE *Journal of Transportation Part A: Systems, Transportation Research Interdisciplinary Perspectives*, and Executive Associate Editor of *Analytic Methods in Accident Research*. He is a member of the Editorial Boards of the ITS Journal, Transportation Research Part C and the International Journal of Sustainable Transportation, Fellow of both ASCE and ITE, and member of multiple TRB Committees. He is the Chair of the ASCE Transportation Safety Committee, member of the Board of Directors (2020-2022) International Road Federation, and a delegate of the National Safety Council - NSC (2021-2023). He is one of 3 founders of the Central Florida Automated Vehicles Partnership and serves on the Mayor's expert panel for the 2030 Orange County Sustainable Operations and Resilience Action Plan. Dr. Abdel-Aty is the Editor Emeritus of Accident Analysis and Prevention, the premier journal in safety

He is pioneer and well recognized nationally and internationally in research in real-time safety, proactive traffic management, integrating road safety and transportation planning, and Connected Vehicles. Dr.

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Aty has managed 74 research projects with an aggregate value of \$22.8 million. He has published more than 710 papers including 367 Journals, with more than 22,300 Google Scholar citations and an H-Index of 81. He has delivered more than 200 presentations, of them more than 25 keynote speeches; He is the most cited author in Road Safety. He was recognized in 2020 by Publons Web-of-Science as a Highly Cited Researcher. According to Clarivate™, about 0.1%, of the world's researchers, in 21 research fields and across multiple fields, have earned this exclusive distinction.

Dr. Aty has many notable contributions in Transportation Safety and Technology and applications of AI, and projects that have been implemented and making a key difference in road safety include: Pro Active Traffic Management (PATM), Real-Time Safety Risk Prediction, and Transportation Safety Planning. Many have been emulated and implemented around the world. In 2019, under Dr Aty's leadership, the University of Central Florida was selected as the first-place winner of USDOT Office of the Secretary Safety Challenge for developing a full working analytical visualization tool. The system is approved for provisional patent and published (patent pending). He has developed three software safety systems based on data analytics, AI and computer vision, Real-Time Safety, ARCIS, and Near Miss Event Detection.

Traffic accidents have become a global challenge with no comprehensive and sustainable solution in sight. The world is approaching yearly 1.4 million fatalities and 50 million serious injuries. According to the US Center for Disease Control, the cost to the world economy is \$2 Trillion. Solving the multifaceted road safety problem would substantially enhance the quality of life globally, save extensive valuable resources and saved funds could be redirected to health, education and helping societies thrive. Dr. Aty is a visionary that started since 2002 to consider Safety Science as a truly multidisciplinary field, with Technology and Data Science as the glue that binds the many relevant fields together. He has developed a system that monitors traffic safety of all the roads and provide alerts in real-time that in the next 5-15 minutes there is a high impending risk of a traffic accident at a certain location. And an Artificial Intelligence system recommends the best solution that will reduce that risk. This is part of what Dr. Aty has invented over the last 20 years and the system has won a 2019 USDOT Safety Challenge among 54 top major technology/university teams. The idea started in 2002 when Dr. Aty inspected over 4,000 accidents and for each analyzed the microscopic pattern of accident occurrence and the associated traffic flow parameters obtained from infrastructure-based detection systems for up to 30 minutes preceding each accident. Dr. Aty could see how the condition on a roadway could change over time to form the situation that leads to an accident. He concluded that there are different flow regimes on highways that could be identified in real-time as accident prone and propagate, thus a solution could be invented to prevent the impending accident. This was the beginning of a long and extensive innovative work as it opened the door to a new field in safety science. Dr. Aty extended his technology to data generated from vehicles, thus applicable to all nations and all roads irrespective of the resources of installing vehicle detection equipment on roads. That data is generated from vehicles as they travel while connected to the infrastructure, cloud or smart phone generated. Then, in several influential studies Dr. Aty created the concept of ProActive Traffic Safety Management (PATM) using various advanced techniques. Dr. Aty adapted these strategies with the objective of reducing the real-time turbulent traffic condition or breaking the cycle of traffic flow regimes leading to higher potential of accidents. In short Dr. Aty's work has totally changed the traffic safety science field. For the first time it is possible to predict every accident before it occurs and have the ability to prevent it. This is a total change in paradigm in road safety science and provides immense hope for a more sustainable, safe, and better transportation system and will further stimulate cutting-edge research and development in road safety science and technology.

Dr. Aty has received the 2020 Transportation Research Board (National Academies) Roy W. Crum Distinguished Service Award, National Safety Council's Distinguished Service to Safety Award, Francis C. Turner award from the American Society of Civil Engineers for his "outstanding leadership in the field of road safety". He has also received the 2019 Transportation Safety Council Edmund R. Ricker Award (Institute of transportation Engineers) and the Lifetime Achievement Safety Award from the American Road and Transportation Builders Association in 2019. He received multiple International awards, e.g., prestigious Prince Michael International Road Safety Award, London 2019. He has delivered more than 25 Keynote speeches around the world.

I am honored to be nominating Professor Aty, and I hope that he would be recognized by this prestigious award, and that this prize brings attention to the major societal problems of road safety. Dr. Aty is a truly distinguished leader, educator and scholar who has made an enormous difference to the world, our country, and students. He is truly deserving of the World Award of Science.

Sincerely



Michael Georgopoulos
Dean, College of Engineering and Computer Science
University of Central Florida



Oct 25th, 2021

World Cultural Council
World Award of Science

Dear Distinguished Panel Members

It is my pleasure to write this letter of reference for Professor Mohamed Abdel-Aty who is being nominated for the World Award of Science. As the ex Chair of MTC [Metropolitan Transport Commission] of the Korean Government, Past President, Korean Society of Transportation [KST], ex Chair, World Road Association [PIARC] Korea, Director, National Center for Sustainable Urban Transportation (ERC), and Professor at the Dept. of Transportation Eng. at Ajou University, and since I am very familiar with Prof. Aty's many contributions to safety science in the US, Korea and around the world, I feel especially qualified to write this letter.

I would not be exaggerating if I state that Prof. Aty is the most famous worldwide and certainly in Korea in safety research, innovation, and technology. That is due to his so many influential and visionary publications, ideas, and projects that changed much of the state-of-the-art. He has visited Korea many times as advisor on many occasions and supported much of our efforts. He was awarded the Korea Society of Transportation's prestigious international award for his "many innovative ideas that changed much of the safety research and practice as one of the top safety researchers that are recognized worldwide". His advice to the International Transport Forum (OECD countries) on his revolutionary real-time safety prediction and prevention technologies has encouraged Korea Expressway Authority to start this effort for implementation. The project which is underway is being conducted by Professor Juneyoung Park of Hanyang University, and former PhD student of Prof. Aty. The main purpose of this research is to develop a real-time monitoring and analysis technology to enhance traffic safety of expressways in Korea.

Dr. Abdel-Aty's innovation in real-time crash prediction and Proactive Traffic Management (PATM) has a huge transformative impact on the research and practice of the traffic and transportation area by enabling the prediction of high crash potential conditions using real-time big data and suggesting the best solution in real-time. In the past 25 years, Dr. Abdel-Aty has published more than 714 papers, including about 370 in journals. Thanks to Dr. Abdel-Aty's breakthrough and continuing work in the real-time crash prediction field, scientists all over the world are pushing forward road safety research to provide real-time road safety insights for traffic safety management and control. The research and practice pioneered by Dr. Abdel-Aty have also played a key role in adding safety aspects to the implementation of Intelligent Transportation System (ITS) technologies by introducing the concept of Proactive Traffic Management (PATM) in order to prevent traffic crashes and save lives through timely intervention in traffic flow. The technology of real-time crash prediction is crucial for PATM strategies by providing the predictive insights for road safety, and hence improve road flow conditions, achieve the goal of "Vision Zero" (eliminate all traffic fatalities and severe injuries), while increasing safe, healthy, equitable mobility for residents. The innovation, in turn, also boosted the use of Big Data and cutting-edge technologies in the field of transportation. Based on the extensive work and the innovative concepts, Dr. Abdel-Aty's team developed the impressive and award-winning system named "Real-time crash risk visualization using integrated tools for traffic safety evaluation and management," which won the USDOT Solving for Safety Visualization Challenge and the prestigious Prince Michael International Road Safety Award in 2019.

Dr. Abdel-Aty is a well-recognized and leading innovator in the field of transportation science. He is also the Editor Emeritus of Accident Analysis and Prevention, the premier journal in safety. From 2019 to 2021, Dr. Abdel-Aty has received the 2020 National Safety Council Distinguished Service to Safety Award, the 2019 ASCE Francis C. Turner Award, and the 2021 Roy W. Crum Distinguished Service Award from the Transportation Research Board of the National Academies for his "achievements in the development of immediate practical applications of his fundamental and developmental research results as well as for contributing broadly to the science of transportation safety." Moreover, he has supervised 35 Ph.D. and 60 master students. I believe Dr. Abdel-Aty's innovation will further benefit society in the future by preventing more traffic crashes and saving lives.

In Korea we are looking at Traffic Safety as a challenge but also an opportunity. In Korea we experience annually close to 5000 traffic deaths (in China as an example this number is nearly 250,000), and over 220,000 injuries. It's a major Public Health problem and a challenge that needs concerted efforts at all levels. But above all it requires much innovative approaches. Here comes the opportunity of generating ideas to use technology which will boost innovation by both scientists and the private sector working to meet this societal challenge. The economic cost of traffic crashes in Korea is estimated at about \$21 Billion. Funds saved by improving safety would be directed to education, health care, environmental programs and other services that will improve directly and indirectly the quality of life, sustainability, air quality and other needs. This is exactly how the impact of Prof. Aty's work is playing a major role in so many ways to achieve that. His impressive real-time safety improvement concepts, in particular, and how it is adapted based on the conditions on each segment of the road network and how for the first time we have an opportunity to prevent actual impending accidents. I have seen this rather complicated system working in real-time and it is very impressive to say the least.

In summary, with Prof. Aty's international stature, creativity and contributions to improving road safety, I honestly cannot think of a more deserving candidate for the honor of the World Award of Science.

Sincerely,



Dr. Keechoo Choi

Professor, Department of Transportation Systems Engineering, Director, National Center for Sustainable Urban Transportation (ERC), Ajou University, Suwon 16499, Korea
ex Chair of MTC [Metropolitan Transport Commission] of the Korean Government
Past President, Korean Society of Transportation [KST]
ex Chair, World Road Association [PIARC] Korea
Member Korea Academy of Engineering



On behalf of
Hyungju Park, President, Ajou University



UNIVERSITY OF CENTRAL FLORIDA

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World Cultural Council
World Award of Science

October 28, 2021

Dear Ladies and Gentlemen

RE: Reference Letter for Professor Mohamed Abdel Aty's Nomination for the World Award of Science

I write to enthusiastically support the nomination of Prof. Mohamed Abdel-Aty, for the World Award of Science. I am very familiar with Professor Aty's accomplishments over many years and can emphatically state that he is an eminent scientist and scholar. I cannot think of a more deserving scientist for the honor based on his contributions to realizing a futuristic vision. My support is based on his outstanding accomplishments, contributions to innovation, and exemplary service to his profession and society. Some of these are summarized in the following paragraphs.

Prof. Aty's Accomplishments and Contributions. Prof. Aty's accomplishments include those obtained as an academic to advance the body of knowledge, those that relate to his activities in the professional societies and those that relate to practice and impact. As an academic, he has served as a Professor for many years, teaching, mentoring, and supervising both undergraduate and graduate students. This has resulted in the graduation of many young men and women with the BS degree, 60 with the MS degree and 35 with the Ph.D. degree. He is currently supervising 18 more Ph.D. students. Most of these qualified engineers and scientists are now holding the fort in the profession. Some are now holding very responsible positions in industry and academia, including states' agencies, consulting firms, and research organizations. For example, his former students now hold professorial positions at many universities in the USA and abroad. These include among others, Pennsylvania State University, California Polytechnic State University, and the University of Kentucky in the USA, Cairo University in Egypt, King Saud University in Saudi Arabia, Tongji University in China and Hanyang University in South Korea. He is currently the head of the Civil, Environmental and Construction Engineering department at the University of Central Florida. As head, he designed and established the first MS degree in

Engineering in Smart Cities in the US. This effort produces professionals that have the skills and expertise to cope with the emerging challenges associated with the creation of Smart Cities. These include the integration of smart transportation, smart and resilient infrastructure, and technological advancements in environmental engineering and water resources that will be necessary for the design and establishment of future cities. This will greatly advance the ability of the new generation of engineers and scientists to cope with an important emerging challenge.

As an Academic, Professor Aty has been conducting leading-edge research in the areas of Road Safety and Active Traffic Management Systems. These incorporate Computer Vision, Deep Learning Modeling and Application, Large Data Collection and Analytics, and Development of Safety Countermeasures. He has been the PI or Co-PI for 76 projects with a total funding for the University of Central Florida of over \$22M. His funding sponsors include US Department of Transportation (USDOT) Office of the Secretary, Federal Highway Administration (FHWA) and Florida Department of Transportation (FDOT). He has 370 refereed archival publications in high-impact journals that include IEEE Transactions on ITS, IEEE Transactions on Vehicle Technology, Transportation Research A, C and F, Journal of Safety Science, Accident Analysis and Prevention, and ASCE Journal of Transportation Engineering. The quality of Prof. Aty's research is manifested in his publication recognition, which includes 10 best paper awards, a Google Scholar citation to date of 22,200 and an h-index of 81. His research activities have led to the development of software, tools, traffic analysis procedures, methods for analyzing large safety and traffic data that are now being used by researchers. His research has also led to the development of safety systems that have been implemented on roadways at locations around the world and are making significant impact on road safety. These include: (i) a procedure that facilitates Crash Predictions for Expedited Detection (CPED). This has been incorporated into the Traffic Safety Management System deployed at FDOT Traffic Management Center. It advances the work of the center to predict and verify high safety risk in real-time, utilizing big data and CCTVs. (ii) Pro Active Traffic Management (PATM) tool, a Real-Time Safety Risk Prediction tool, (iii) The award-winning system for the USDOT Office of the Secretary "Safety Challenge" that won the first place (award received from HE Elaine Chao). It has been implemented in Florida. USDOT has also included it in an RFP for other jurisdictions for implementation, and more funding to add more features to the system. The system is approved for a US provisional patent which has been published. (iv). An innovative design of intersections which has been included in the Florida Manual on Intersection Control and Evaluation. (v) A new intersection design to accommodate high volumes while reducing conflicts. This has been implemented and evaluated. (vi) Crash Modification Factors (CMFs) which are now included in the FHWA's CMFs Clearinghouse. (vi). Work on Diverging Diamond intersections (DDI) which has led to FL converting 35 interchanges to DDIs. (vii). Solutions for mitigating the impact of fog condition on roadway sections which have now been implemented. (viii) Machine Learning Models that predict traffic movements at intersections and traffic signal data for up to 5 subsequent cycles. These models are being used by FDOT, thereby eliminating the need for cameras and computer vision systems at several signalized intersections. Thus, providing a key that significantly advances a more efficient use of adaptive signals and

Infrastructure to Vehicles communication. These examples clearly illustrate the exceptional way that Dr. Aty has contributed to the profession.

Service to the Profession. Professor Aty is a Fellow of the American Society of Civil Engineers (FASCE), a Fellow of the Institute of Transportation Engineers (FITE), and a member of the Academy of Science, Engineering and Medicine of Florida (ASEMFL). He has been actively participating in the activities of the Profession through the exemplary service he has been giving to these and other professional organizations over the years. For example, he served as Editor-in Chief/Editor of several professional archival Journals. These include Accident Analysis and Prevention, published by Elsevier and the Journal of Transportation: Systems, published by ASCE. Professor Aty has and continues to serve as the Chair of several committees of professional organizations and Co-Chair of national and international conferences and symposiums. These include Chair of the Transportation Safety Committee of ASCE, Co-chair of Road Safety and Simulation Conference in 2015, and Chair of the 5th and 7th International Symposiums on Transportation Safety in Shanghai.

Service to Society. In addition to Prof. Aty's exemplary service to the profession, he has been involved in numerous activities that illustrate his keen interest in serving society. For example, his willingness to meet with the press when ever asked, and his knowledgeable and clear answers to question has made it easier for the public to understand difficult and puzzling issues that relate to traffic safety. He has given 16 TV interviews, 4 radio interviews and published 26 news articles in the press, including the Associated Press, the Washington Post, the Boston Globe, Los Angeles Times, the London Guardian and the Seattle Post Intelligencer. Professor Aty has also provided exemplary service to society through his membership in several civic societies and committees in the USA and abroad. For example in the USA, he served as a member of the Orange County Mayor's County Sustainable Operations and Resilience Action Plan and as a delegate to the National Safety Council. Internationally, Prof Aty has served as an adviser to many safety organizations or as a member of many safety committees. These include the Italy National Promotion Commission for Associate and full Professors in Transportation and Infrastructure sector, chair of the Advisory Committee of the Joint International Research Laboratory in Transportation Safety China, member of the Advisory Board to the College of Engineering at Tongji University, served as a foreign advisor to the Transportation Commission, Republic of Korea, served as a leading member of the team that developed the Shanghai strategic safety plan and as an adviser to the Road Federation Group of Experts on Road Safety that included the IRF Geneva and the Ministries of Transportation and Communications of Egypt.

Honors and Awards. Because of the exemplary professional and societal accomplishments of Prof. Aty, he has received numerous honors and awards. These include, (i) The Prince Michael International Road Safety Award, (ii) the Distinguished Service to Safety Award, regarded as the most prestigious award given to individuals by the National Safety Council, (iii) the Roy W. Crum Distinguished Service Award, top award of Transportation Research Board of the National Academies, 2020, (iv) the Lifetime Safety Achievement Award, the ARTBA Transportation Safety Council (v) the Edmund R. Ricker Safety Award, Institute of Transportation Engineering (ITE),

and (vi) the Korean Society of Transportation, 2018 Achievement Award. Again these awards are a testimony to the exemplary contribution of Dr. Aty to his profession and the Society, both at home and abroad.

In Summary, Prof Aty is an eminent scientist, who has extraordinarily exceeded all the expectations. I therefore without any reservations enthusiastically support the recommendation for him to be the recipient of the 2022 World Award of Science.

Sincerely,

A handwritten signature in blue ink, appearing to read "Nicholas J Garber".

Nicholas J Garber Ph.D., P.E, F.ICE (UK), F.ITE., Dist.M.ASCE
Henry L. Kinnier Professor Emeritus, UVA
Distinguished Professor, UCF
Member of the National Academy of Engineering

Mohamed A. Abdel-Aty, Ph.D., P.E., F.ASCE, F.ITE, ASEM FL

Pegasus Distinguished Professor, Trustee Endowed Chair

Chair, Department of Civil, Env & Construction Engineering, *University of Central Florida*

<https://www.cece.ucf.edu/aty/>

Dr. Mohamed Abdel-Aty, PE is a Trustee Endowed Chair at the University of Central Florida (UCF). He is a Pegasus Distinguished Professor and the Chair of the Civil, Environmental and Construction Engineering Department at UCF. He is leading the Future City initiative at UCF. He introduced in 2019 the first MS degree in Smart Cities in Engineering in the US. He is also the director of the Smart and Safe Transportation Lab¹, the Winner of the USDOT Solving for Safety Visualization Challenge², Real-time crash risk visualization using integrated tools for traffic safety evaluation and management, November 2019. His main expertise, and interests are in the areas of traffic safety, simulation, big data and data analytics, Intelligent Transportation Systems and Connected and Automated Vehicles. He is pioneer and well recognized nationally and internationally in work and research in real-time safety, Proactive traffic management, integrating road safety and transportation planning, Highway Safety Manual and Connected Vehicles. In 2015, he was awarded the Pegasus Professorship, the highest honor at UCF. Dr. Abdel-Aty has managed 74 research projects of \$22.8 million. He has published more than 710 papers, more than 367 in journals (Google Scholar citations are more than 22,300 H-Index 81; his Science direct papers downloaded > 370,000 times). He is the most cited author in Road Safety. He was recognized in 2020 by Publons Web-of-Science as a Highly Cited Researcher, Clarivate™ identifies the world's most influential researchers — the select few who have been most frequently cited by their peers over the last decade (about 0.1%, of the world's researchers, in 21 research fields and across multiple fields, have earned this exclusive distinction, November 2020. He has supervised to completion 35 PhD and 60 MS students (currently 18 more PhD students). Dr. Abdel-Aty is the Editor Emeritus of *Accident Analysis and Prevention*, the premier journal in safety. UCF Transportation Science and Technology under Dr. Aty's leadership ranked 29 in the world and 5th in the US, ARWU (Shanghai ranking), 2020.

While Dr. Aty's early career was very successful in developing new ideas in safety research, he was convinced that he still followed the traditional reactive approaches and that the results will still be unimpressive in eliminating fatalities and serious injuries. The real revolution started in 2002 when Dr. Aty convinced inspected the dual loop detectors' data being collected on Freeways for other purposes. He was convinced that this new data should be used in safety to achieve his pro-active safety vision. At that time the word "big data" was not yet used, but this data was large. Dr. Aty inspected carefully over 4000 accidents and for each analyzed the microscopic pattern of accident occurrence and the associated traffic flow parameters for up to 30 minutes preceding each accident. Dr. Aty could see how the condition on a freeway could change over time to form the situation that leads to an accident. He concluded that there are different flow regimes on highways and if these regimes could be identified in real-time and how they propagate, a solution could be invented to stop the impending accident. This opened the door to a new field in safety science and changed how we understand and predict traffic accidents. The work led to more refined and accurate algorithms by which the accident could be predicted by type, severity and condition. As data technology improved, Microwave Vehicle Detections Systems and AVI became more common, expanding the work to more innovation. Data is now available in excellent quality in most metropolitan areas with 20-60 sec intervals for all lanes. In addition, many arterial roads are equipped with BlueTooth detectors and traffic signals augmented with various traffic data capturing technologies. New vehicle-based detections with GPS and Smart Phone sensors that could be accessed by various apps are more common. Dr. Aty extended his technology to data generated from vehicles so it is more microscopic and applicable to other nations and include more roads. Data is generated from vehicles as they travel while connected through 5G/LTE to the infrastructure, cloud or smart phone generated. Dr. Aty used all these data simultaneously to guarantee coverage of the road network, improving the process and utilizing Machine learning algorithms in a comprehensive system that captures all data in real time and implement numerous algorithms trained for specific type of locations and accidents. In one of the latest developments, pedestrian crashes are predicted using the data generated from vehicles, CCTVs and Pedestrian Smart Phones, expecting the risk of pedestrian violations or unexpected road crossing. Using the same logic Pedestrian accidents could be eliminated. The system monitors the whole network, while suggesting the solution in real-time to the operator.

Dr. Aty has many notable contributions in research and practice in Transportation Safety and Technology and applications of AI. For example, multiple key projects that have been implemented and making key difference in

road safety: New concepts that are introduced and promoted over the last 20 years and now well accepted in practice: e.g., Pro Active Traffic Management (PATM), Real-Time Safety Risk Prediction, Transportation Safety Planning at the Macroscopic level. Many have been emulated around the world, implemented, and became NCHRP projects for inclusion in the Highway Safety Manual; the award-winning system for the USDOT Office of the Secretary Safety Challenge that won the first place (award received in Nov. 2019 from HE Elaine Chao USDOT secretary of Transportation), has been implemented in Florida, USDOT has included it in an RFP for other jurisdictions to implement, and received more USDOT funding to add more features to the system, implemented at TMC by FDOT. The system is approved for provisional patent and published (patent pending); work in innovative intersection designs is used in the FL Manual on Intersection Control Evaluation. Also invented and evaluated a new intersection design to accommodate high traffic volumes while reducing conflicts, and extensive work on Diverging Diamond Interchanges, resulting in FL converting 35 intersections to DDI; major work for the Highway Safety Manual new version as well as ongoing relevant NCHRP work; first more than 15 years ago to realize the safety challenges with toll plazas, investigated and suggested solutions that are now all implemented, and developed almost 8% of the Crash Modification Factors (CMFs) in the FHWA's CMFs Clearinghouse and a CMF Manual for Florida.

Additionally, multiple key projects that have been implemented and making a big difference beyond safety: machine learning models predict intersections' traffic movements and SPaT data for up to 5 cycles in the future. FDOT is using them to substitute the need for cameras and computer vision system at many intersections, thus saving substantial funds. This advancement is key for more efficient Adaptive signals and vehicle to infrastructure connectivity; key player in implementing transportation technology in Florida. For example, brought \$11.9 FHWA ATCMTD grant to research and deploy CV technology, Autonomous shuttles and pedestrian safety system to east Orange county; technology development, a multi driving simulation system for CAV testing, and 3 software safety systems based on data analytics, AI and computer vision, Real-Time Safety management, ARCIS, NMEDS.

On the international level, Dr. Aty is an Honorary Professor at Queensland University of Technology, Australia and Hanyang University, Korea, and Fellow at Loughborough University, UK. Internationally, implemented and advised in many key projects: e.g., development of the Advanced Traffic and Safety Management System in Abu Dhabi; main person in developing the Shanghai strategic safety plan, resulted in almost 50% reduction in fatalities; impacted the implementation of ATM in Sweden; provided advise to the Transport Research Forum (OECD countries) and PIARC. Dr. Aty is Foreign Advisor to Metropolitan Transportation Commission, Republic of Korea.

Dr. Aty is a member of the Academy of Science, Engineering and Medicine of Florida (ASEMFL). He is an Associate Editor for the ASCE *Journal of Transportation Part A: Systems and Transportation Research Interdisciplinary Perspectives, and Executive Associate Editor for Analytic Methods in Accident Research*. He is a member of the Editorial Boards of the ITS Journal, Transportation Research Part C and the International Journal of Sustainable Transportation, Fellow of both ASCE and ITE, and member of multiple TRB Committees. He is the Chair of the ASCE Transportation Safety Committee. A member of the Board of Directors (2020-2022) International Road Federation, Washington DC, and a delegate of the National Safety Council (2021-2023). He is One of 3 founders of the Central Florida Automated Vehicles Partnership, Member, Orange County's Mayor expert panel, 2030 Orange County Sustainable Operations and Resilience Action Plan.

In 2003, he was selected as UCF's Distinguished Researcher, and in 2007 as UCF's Outstanding Graduate Teacher. He has received multiple research awards from the College of Engineering & Computer Science in 2003, 2008, 2010 and 2012, including the Dean's Advisory Board award. He and his students received multiple awards for their papers, PhD and MS theses and research from ASCE, TRB, CUTC, WCTR, ITS and ITE. Dr. Aty has received the 2020 Roy Crum Distinguished Service Award from TRB of the National Academies, National Safety Council's Distinguished Service to Safety Award, Francis Turner award from ASCE for his "outstanding leadership in the field of road safety nationally and internationally". He has also received the 2019 Transportation Safety Council Edmund Ricker Award (ITE) and the Lifetime Achievement Safety Award from ARTBA in 2019. He has also received multiple International awards including the prestigious Prince Michael International Road Safety Award, London 2019.

¹ <https://www.youtube.com/watch?v=ID5PpVTFJ5o&feature=youtu.be>

² <https://www.bts.gov/newsroom/us-transportation-secretary-announces-solving-safety-visualization-challenge-winner>

Mohamed A. Abdel-Aty, Ph.D., P.E., F.ASCE, F.ITE, ASEM FL

Pegasus Distinguished Professor

Trustee Endowed Chair

<https://www.cece.ucf.edu/aty/>

SUMMARY CURRICULUM VITAE

FIELDS OF EXPERTISE

Traffic Safety data, design, performance, analysis, evaluation, management and planning, Intelligent Transportation Systems, Connected Vehicles, Automated vehicles, Active Traffic Management, Traffic and signal prediction, Traffic Simulation, Machine Learning, Statistical and Econometrics Applications in Transportation Engineering.

EDUCATION

Ph.D. in Civil Engineering (Transportation), September 1995, University of California, Davis.

M.Sc. in Civil Engineering (Transportation), July 1991, Alexandria University.

B.Sc. in Civil Engineering (Honors, Ranked in top 1%), June 1985, Alexandria University.

EMPLOYMENT

- *Chair*, Department of Civil, Environmental & Construction Engineering (Fall 2013- present), University of Central Florida
- *Professor* of Civil Engineering (8/1995 – present): Civil, Environmental & Construction Engineering Dept., University of Central Florida

Trustee Endowed Chair, Pegasus Professor, Director, Future City Initiative

HONORS AND AWARDS

- **Distinguished Service to Safety Award**, the most prestigious award given to individuals by the National Safety Council, 2020.
- **Roy W. Crum Distinguished Service Award, Transportation Research Board, The National Academies, 2020.**
- Elected member of the Academy of Science, Engineering and Medicine of Florida (ASEMFL), 2020.
- **Prince Michael International Road Safety Award**, Dec. 2019. Considered as the Oscars of road safety!
- Winner, USDOT Solving for Safety Visualization Challenge, **Real-time crash risk visualization using integrated tools for traffic safety evaluation and management**, November 2019.
<https://www.bts.gov/newsroom/us-transportation-secretary-announces-solving-safety-visualization-challenge-winner>
- Achievement Certificate, Elsevier, 300,000 publications downloaded, Science Direct, Oct. 2019.
- **Lifetime Achievement Safety Award**, American Road & Transportation Builders Assoc (ARTBA), 2019
- **2019 Transportation Safety Council Edmund R. Ricker Individual Award, Institute of Transportation Engineering (ITE)**
- **Francis C. Turner award**, ASCE, 2019
 for his “outstanding leadership in the field of road safety nationally and internationally”
- MetroLAB Network, Innovation of the Month, Jan. 2019.
- Korean Society of Transportation, **2018 Achievement Award**, Dec. 2018
 “your many innovative ideas that changed much of the safety research and practice as one of the top safety researchers that are recognized worldwide”
- Institute of Traffic Engineering, Shanghai, 2018 **Excellence Traffic Safety Improvement Service Award**.
 “The award is based on your credentials as a world known traffic safety expert”
- University 2014 award for “Faculty Excellence in Mentoring Doctoral Students”, recipient in the disciplinary grouping of “Engineering, Physical Sciences, and Life Sciences”, March 2015.

- **University Excellence in Graduate Teaching**, UCF, 2008.
- **University Distinguished Researcher**, University of Central Florida, 2003.

LEADERSHIP SUMMARY

- Founder, Smart City MS, first dedicated MS degree in Smart Cities in the US.
- UCF Transportation Science and Technology under Dr. Aty's leadership ranked 29 in the world and 5th in the US, ARWU (Shanghai ranking), 2020.
- UCF Civil Engineering under Dr. Aty's leadership ranked in top 40 in the US, ARWU, Shanghai rank, 2020.
- Editor-in-Chief (July 2013 – 2021), Accident Analysis and Prevention, top safety Journal, Elsevier
- Editor Emeritus, Accident Analysis and Prevention, current.
- Chair, Transportation Safety Committee, ASCE T&DI, 2018-present.
- Executive Associate Editor, Analytic Methods in Accident Research (AMAR)
- Associate Editor, Journal of Transportation Engineering: Systems, ASCE, 2021-present.
- Member Board of Directors (2020-2022) International Road Federation, Washington DC.
- Board of Delegates, National Safety Council (2021-2023)

PATENTS, Software, Innovation

- Real-Time Pro-active Traffic Safety Management UCF System including Operator and Decision Making Components, Provisional **Patent**, approved provisional patent application number 62/959,473 filed January 10, 2020
- Patent Pending Application No.: 17/248,142, Filing Date: 1/11/2021
- Real-Time Pro-active Traffic Safety Management UCF System including Operator and Decision Making Components, Software and User Manual **Copyright**, UCF CPY No.: 34291
<https://www.youtube.com/watch?v=ID5PpVTFJ5o&feature=youtu.be>
- Crash Predictions for Expedited Detection (CPED), TMC system currently deployed at FDOT.
- Future City Initiative, U.S. Trademark Application Serial No. 88/768707
- Smart and Safe Transportation, U.S. Trademark Application Serial No. 88/768739
- Automated Roadway Conflicts Identification System (ARCIS), Road Safety using Computer Vision, used by 7 universities and private industry.
- Near Miss Event Detection System (NMEDS), Automatic conflict Analytics using computer vision and Machine learning.

PROFESSIONAL SOCIETY MEMBERSHIPS & ACTIVITIES

- Transportation Research Board, National Research Council, National Academy of Sciences, long time member 3 committees
- International Advisor, Ministry of Land, Infrastructure and Transport, Korea, 2021-2023.
- Advisor, Association of Bay Area Governments, Metropolitan Transportation Commission, CA, current.
- Senior technical counselor to Saudi National Safety Council
- Advisor, PIARC's Special Project "Smart Roads Classification (SRC)", World Road Association and Polytechnic Valencia, Spain.
- ITF/OECD Roundtable on Artificial Intelligence in Road Traffic Crash Prevention, OECD, 2021
- Member, Orange County FL Sustainability & Resilience Committee, 2020.
- Member Italy National Promotion Commission for Associate and full Professors in Transportation and Infrastructure sectors (2016/17).
- Visiting Professor: Hanyang University, Korea; KSU and Dammam Universities, Saudi Arabia; Nile University, Egypt; Tongji, BJTU, Central South Universities, China; QUT, Australia.
- Member Advisory Board, College of Engineering, Tongji University.
- Institute of Advanced Studies (IAS) Fellow, Loughborough University, UK

PROJECTS

Seventy four projects, total funding at UCF of \$22.8 million of which \$18.5 million as Principal Investigator (PI) or sole (PI). Source of funding: USDOT Office of the Secretary, FHWA, FHWA ATCMTD; multiple USDOT UTCs, NCHRP's National Academy of Sciences, FTA, FDOT, CDOT, MetroPlan Orlando, CFX, GOAA, AIT/FIA foundation.

SUPERVISION OF GRADUATE STUDENTS

- Supervised to completion (*as major Professor*) 35 PhD Dissertations. Currently supervising 18 more PhD students. Twice best University dissertation (2006 and 2016). Co-Advisor or External on 13 dissertations at other Universities in Singapore, Canada, Belgium, India, Egypt and US.
- Supervised to completion 60 MS theses.
- More than 20 former students are professors in PennState, CalPoly, LSU, Wyoming, WV, Kentucky, Cairo, Alexandria, Sharjah, King Saud, Tongji, Beijing, Central South, Hanyang in Korea, etc. Professionals in leadership positions, FDOT, CalTrans, VA DOT, SC DOT etc. Former student Albinder Dhindsa founded a logistics company “Grofers” in India, a several hundred million dollars company.

MEDIA

16 TV interviews

4 Radio interviews

26 News articles, including:

PUBLICATIONS

- To date total of 713 publications, of which 367 journal publications in top high Impact Journals.
- More than 10 best papers awards in ASCE J. of Transp Eng, TRB and WCTR international conference.
- More than 30 best cited papers
- Top 4 cited TRB papers in 2019, and among 8 most prolific TRB authors last 10 years.
- Publons, Web-of Science, top 0.1% cited authors globally, 2020.
- Ranked by Microsoft Academic as the world 2nd most impactful author in Transport Engineering in 2020
<https://academic.microsoft.com/topic/22212356/authors?pi=1>
- Top 50 most Cited Civil Engineers in the US and Top 150 worldwide, Elsevier and Shanghai University
- Top author in Highway Accidents and Accident Prevention, Scopus, last 5 years
- Top author in Traffic Safety, Web of Science, last 5, 10 and 15 years
- 347 refereed conference and other papers, 1 edited book and 4 book chapters, 4 invited papers.

CITATIONS

Google Scholar in Oct. 2021 produced the following:

Citations: 22,200

h-Index: 80

h-Index last 5 years 67, highest among Transportation Scholars.

i10-index: 286

Science Direct: Papers downloaded > 370,000 times

Newsflo: Media mentions: 45

PRESENTATIONS

- Delivered 27 Keynote and plenary speeches at major international conferences around the world including in US, Belgium, Brazil, China, Greece, Korea, Turkey, KSA, Jordan, Qatar, and UAE.
- Delivered more than 240 presentations at conferences or invited.
- Chaired major international conferences in the US, China and Egypt.

Mohamed A. Abdel-Aty, Ph.D., P.E., F.ASCE, F.ITE, ASEM FL

<http://www.cece.ucf.edu/people/aty/>

Important papers (370 publications in journals)

1. Li P., Abdel-Aty M., Islam Z. (2021) Driving Maneuvers Detection Using Semi-supervised LSTM and Smartphone Sensors, *Journal of the Transportation Research Board*.
<https://journals.sagepub.com/doi/10.1177/03611981211007483>
2. Zhang S., Abdel-Aty M., Wu Y., Zheng O. (2021) Pedestrian Crossing Intention Prediction at Red-Light Using Pose Estimation, *IEEE Transactions on Intelligent Transportation Systems*,
<https://doi.org/10.1109/TITS.2021.3074829>
3. Abdelraouf A., Abdel-Aty M., Yuan J. (2021) Utilizing Attention-Based Multi-Encoder-Decoder Neural Networks for Freeway Traffic Speed Prediction *IEEE Transactions on ITS*,
<https://ieeexplore.ieee.org/document/9535259>
4. Yue L, Abdel-Aty M., Wu Y., Yuan J. (2020) An Augmentation Function for Active Pedestrian Safety System Based on Crash Risk Evaluation, *IEEE Transactions on Vehicular Technology*, 69(11), art. no. 9169829, pp. 12459-12469, Nov. 2020.
<https://ieeexplore.ieee.org/abstract/document/9169829>
5. Cai Q., Abdel-Aty M., Yuan J, Lee J. (2020) Real-Time Crash Prediction on Expressways Using Deep Generative Models, *Transportation Research Part C: Emerging Technologies*, 117, 102697. <https://doi.org/10.1016/j.trc.2020.102697>
6. Yuan J, Abdel-Aty M., Yue L., Cai Q. (2020) Modeling Real-Time Cycle-Level Crash Risk at Signalized Intersections Based on High-Resolution Event-Based Data, *IEEE Transactions on Intelligent Transportation Systems*, available on line.
<https://doi.org/10.1109/TITS.2020.2994126>
7. Shi Q. and Abdel-Aty M. (2015) Big Data applications in real-time traffic operation and safety monitoring and improvement on urban expressways, *Transportation Research C*, Vol 58 part B, pp 380-394. Cited 310 times
8. Ahmed M. and Abdel-Aty M. (2013) A Data Fusion Framework for Real-Time Risk Assessment on Freeways, *Transportation Research Part C, Emerging Technologies*, Volume 26, January 2013, Pages 203-213.
9. Park P. and Abdel-Aty M. (2011) A Stochastic Catastrophe Model using Two-Fluid Model Parameters to Investigate Traffic Safety on Urban Arterials, *Accident Analysis & Prevention*, Elsevier, Vol. 43, Issue 3, pp. 1267-1278.
10. Abdel-Aty M. and Radwan E. (2000). Modeling Traffic Accident Occurrence and Involvement, *Accident Analysis & Prevention Journal*, Elsevier, **Vol. 32, No. 5**, pp. 21-30. **Cited 970 times**

Mohamed A. Abdel-Aty, Ph.D., P.E., F.ASCE, F.ITE, ASEM FL

<http://www.cece.ucf.edu/people/aty/>

JOURNAL PUBLICATIONS

1. Ma W., He Z., Wang L., Abdel-Aty M., Yu C. (2021), Active Traffic Management Strategies for Expressways based on Crash Risk Prediction of Moving Vehicle Groups, *Accident Analysis and Prevention*, accepted Sep. 2021.
2. Gong Y., Abdel-Aty M. (2021) Using Machine Learning to Estimate Pedestrian and Bicyclist Count of Intersection by Bluetooth Low Energy, *ASCE Journal of Transportation Engineering, Part A Systems*, Sep. 2021.
3. Li Y., Li M., Yuan J., Lu J., Abdel-Aty M. (2022) Analysis and prediction of intersection traffic violations using automated enforcement system data, *Accident Analysis and Prevention*, 162, 106422. <https://doi.org/10.1016/j.aap.2021.106422>
4. Abdelraouf A., Abdel-Aty M., Yuan J. (2021) Utilizing Attention-Based Multi-Encoder-Decoder Neural Networks for Freeway Traffic Speed Prediction *IEEE Transactions on ITS*, accepted August 2021.
5. Cai Q., Abdel-Aty M., Mahmoud N., Ugan J., Al-Omari M. (2021) Developing a Grouped Random Parameter Beta Model to Analyze Drivers' Speeding Behavior on Urban and Suburban Arterials with Probe Speed Data, *Accident Analysis and Prevention*, 2021, 161, 106386.
6. Wang L., Wang K., Ma W., Abdel-Aty M., Li L. (2021) Real-Time Safety Analysis for Expressways Considering the Heterogeneity of Different Segment Types, *Journal of Safety Research*, accepted July 2021.
7. Mahmoud N., Abdel-Aty M., Cai Q., Zheng O. (2021) Vulnerable Road Users' Crash Hotspot Identification on Multi-Lane Arterial Roads Using Estimated Exposure and Considering Context Classification, *Accident Analysis and Prevention*, vol. 159, Sep 2021. <https://doi.org/10.1016/j.aap.2021.106294>
8. Ugan J., Abdel-Aty M., Cai Q., Mahmoud N., Al-Omari M. (2021) Effect of Various Speed Management Strategies on Bicycle Crashes for Urban Roads in Central Florida, *Journal of the Transportation Research Board*, June 2021.
9. Xiao G., Lee J., Jiang Q., Huang H., Abdel-Aty M., Wang L. (2021) Safety Improvements by Intelligent Connected Vehicle Technologies: A Meta-Analysis Considering Market Penetration Rates, *Accident Analysis and Prevention*, 2021, 159, 106234. <https://doi.org/10.1016/j.aap.2021.106234>
10. Zhang S., Abdel-Aty M., Wu Y., Zheng O. (2021) Pedestrian Crossing Intention Prediction at Red-Light Using Pose Estimation, *IEEE Transactions on Intelligent Transportation Systems*, <https://doi.org/10.1109/TITS.2021.3074829>
11. Al-Omari M., Abdel-Aty M., Cai Q. (2021) Crash Analysis and Development of Safety Performance Functions for Florida Roads in the Framework of the Context Classification System, *Journal of Safety Research*, available on line Aug. 2021. <https://doi.org/10.1016/j.jsr.2021.08.004>
12. Alver Y., Onelcin P., Ceckli A., Abdel-Aty M. (2021) Evaluation of Pedestrian Critical Gap and Crossing Speed at Midblock Crossing Using Image Processing, *Accident Analysis and Prevention*, 156, 106127.

13. Kim H., Kwon K., Park N., Park J., Abdel-Aty M. (2021) Crash-and simulation-based safety performance evaluation of freeway rest area, *Sustainability*, 2021, 13(9), 4963.
14. Lee J., Mao, S., Abdel-Aty, M., Lian, Y., Yue, L., Yun, I. (2021). Association Between Truck Crashes Due to Mechanical Failure and Truck Age. *Journal of Advanced Transportation*, vol. 2021, Article ID 8857458, 7 pages. <https://www.hindawi.com/journals/jat/2021/8857458/>
15. Lee J., Mao S., Abdel-Aty M., Fu W. (2021) The Use of Bivariate Random-Parameter Probit Model to Analyze the Severity of Highway Traffic Crashes Involving School-Age Children, *Journal of the Transportation Research Board*, accepted March 2021.
16. Al-Omari M., Abdel-Aty M. (2021) Evaluation of a New Intersection Design “Shifting Movements”, *Journal of the Transportation Research Board*, accepted March 2021.
17. Yuan J., Abdel-Aty M., Fu J., Yue L., Eluru N. (2021) Developing safety performance functions for freeways at different aggregation levels using multi-state microscopic traffic detector data, *Accident Analysis and Prevention*, 151, 105984
18. Li P., Abdel-Aty M., Islam Z. (2021) Driving Maneuvers Detection Using Semi-supervised LSTM and Smartphone Sensors, *Journal of the Transportation Research Board*. <https://journals.sagepub.com/doi/10.1177/03611981211007483>
19. Mahmoud N., Abdel-Aty M., Cai Q. (2021) Factors Contributing to Operating Speeds on Arterial Roads by Context Classifications, *ASCE Journal of Transportation Engineering*, Part A: Systems, 147(8): 04021040
20. Abdelrahman A., Abdel-Aty M., Yuan J., Al-Omari M. (2021) Systematic Safety Evaluation of Diverging Diamond Interchanges Based on Nationwide Implementation Data, *Journal of the Transportation Research Board*. <https://journals.sagepub.com/doi/10.1177/03611981211004961>
21. Islam Z., Abdel-Aty M. (2021) Sensor-based Transportation Mode Recognition Using Variational Autoencoder, *Journal of Big Data Analytics in Transportation*, accepted Jan 2021.
22. Mahmoud N., Abdel-Aty M. Cai Q., Yuan J. (2021) Estimating Cycle-Level Real-Time Traffic Movements at Signalized Intersections, *Journal of Intelligent Transportation Systems: Technology, Planning, and Operations*, accepted Jan. 2021. <https://www.tandfonline.com/doi/full/10.1080/15472450.2021.1890072>
23. Mahmoud N., Abdel-Aty M., Cai Q. (2021) Predicting Cycle-Level Traffic Movements at Signalized Intersections Using Machine Learning Models, *Transportation Research Part C: Emerging Technologies*, 124, art. no. 102930. <https://doi.org/10.1016/j.trc.2020.102930>
24. Yue L., Abdel-Aty M. (2021) Effects of Forward Collision Warning Technology in Different Pre-Crash Scenarios, *Transportation Research F*, Volume 76, January 2021, Pages 336-352. <https://doi.org/10.1016/j.trf.2020.12.004>
25. Islam Z., Abdel-Aty M., Cai Q., Yuan J. (2021) Crash Data Augmentation Using Variational Autoencoder, *Accident Analysis and Prevention*, Volume 151, March 2021, 105950. <https://doi.org/10.1016/j.aap.2020.105950>
26. Islam Z., Abdel-Aty M. (2021) Real-Time Vehicle Trajectory Estimation Based on Lane Change Detection Using Smartphone Sensors, *Journal of the Transportation Research Board*. <https://journals.sagepub.com/doi/10.1177/03611981211990681>

27. Li P., Abdel-Aty M., Yuan J. (2021) Using Bus Critical Driving Events as Surrogate Safety Measures for Pedestrian and Bicycle Crashes Based on GPS Trajectory Data, *Accident Analysis and Prevention*, Vol 150, February 2021, 105924.
<https://doi.org/10.1016/j.aap.2020.105924>

28. Rahman H., Abdel-Aty M., Wu Y. (2021) A Multi-Vehicle Communication System to Assess the Safety and Mobility of Connected and Automated Vehicles, *Transportation Research Part C: Emerging Technologies*, [Volume 124](#), March 2021, 102887.
<https://doi.org/10.1016/j.trc.2020.102887>

29. Iraganaboina N., Bhowmik T., Yasmin S., Eluru N., Abdel-Aty M. (2021) Evaluating the Influence of Information Provision (When and How) on Route Choice Preferences of Road Users in Greater Orlando: Application of a Regret Minimization Approach, *Transportation Research Part C: Emerging Technologies*, Vol. 122, January 2021, 102923.
<https://doi.org/10.1016/j.trc.2020.102923>

30. Li P., Abdel-Aty M., Cai Q., Islam Z. (2020) A Deep Learning Approach to Detect Real-Time Vehicle Maneuvers Based on Smartphone Sensors, *IEEE Transactions on Intelligent Transportation Systems*, accepted Oct. 2020.

31. Zhang S., Abdel-Aty M. (2020) Prediction of Pedestrians' Near-accident Events at Signalized Intersections Using Gated Recurrent Unit (GRU), *Accident Analysis and Prevention*, Crash Precursors and Surrogate Measures of Safety: Measurement Technology, Theory and Applications, 148, 105844.

32. Zhang S., Abdel-Aty M., Cai Q., Li P., Ugan J. (2020) Prediction of Pedestrian-Vehicle Conflicts at Signalized Intersections Based on Long Short-Term Memory Neural Network, *Accident Analysis and Prevention*, Special issue on Road Safety under the Environment of Intelligent Connected Vehicles, 148, 105799.

33. Rahman H., Abdel-Aty M. (2020) Application of Connected and Automated Vehicles in a Large Scale Network by Considering V2V and V2I Technology, *Journal of the Transportation Research Board*, 0361198120963105.

34. Park JY., Abdel-Aty M. (2021) Application of Random Effects Nonlinear Model for Analyzing Motorized and Non-Motorized Traffic Safety Performance, *ASCE Journal of Transportation Engineering*, Part A: Systems, 147(1): 04020147.
<https://doi.org/10.1061/JTEPBS.0000485>

35. Li P., Abdel-Aty M., Cai Q., Islam Z. (2020) A Deep Learning Approach to Detect Real-Time Vehicle Maneuvers Based on Smartphone Sensors, *IEEE Transactions on Intelligent Transportation Systems*. <https://doi.org/10.1109/TITS.2020.3032055>

36. Yue L, Abdel-Aty M., Wu Y., Yuan J. (2020) An Augmentation Function for Active Pedestrian Safety System Based on Crash Risk Evaluation, *IEEE Transactions on Vehicular Technology*, 69(11), art. no. 9169829, pp. 12459-12469, Nov. 2020.
 ISSN: 0018-9545 Online ISSN: 1939-9359 Digital Object Identifier:
 10.1109/TVT.2020.3017131
<https://ieeexplore.ieee.org/abstract/document/9169829>

37. Gong Y., Abdel-Aty M., Yuan J., Cai Q. (2020) Multi-Objective Reinforcement Learning Approach for Improving Safety at Intersections with Adaptive Traffic Signal Control, *Accident Analysis and Prevention*, Vol 144, 105655. ,
<https://doi.org/10.1016/j.aap.2020.105655>

38. Abdelrahman A., Abdel-Aty M. (2020) Evaluation of Displaced Left-Turn Intersections, *Transportation Engineering* 1, Elsevier, <https://doi.org/10.1016/j.treng.2020.100006>

39. Abdel-Aty M., Wu Y., Saad M., Rahman M. (2020) Safety and Operational Impact of Connected Vehicles' Lane Configuration on Freeway Facilities with Managed Lanes, *Accident Analysis and Prevention* 144, Special issue on Road Safety under the Environment of Intelligent Connected Vehicles, Article No: 105616, PII: S0001-4575(20)30094-4

40. Yuan J, Abdel-Aty M., Yue L., Cai Q. (2020) Modeling Real-Time Cycle-Level Crash Risk at Signalized Intersections Based on High-Resolution Event-Based Data, *IEEE Transactions on Intelligent Transportation Systems*, available on line.
<https://doi.org/10.1109/TITS.2020.2994126>

41. Wu Y., Abdel-Aty M., Zheng O., Cai Q., Zhang S. (2020) Automated Safety Diagnosis Based on Unmanned Aerial Vehicles Videos and Deep Learning Algorithm, *Journal of the Transportation Research Board*, 0361198120925808.
<https://doi.org/10.1177/0361198120925808>

42. Yue L., Abdel-Aty M., Wu Y., Hasan S., Zheng O. (2020) Identifying Pedestrian Crash Contributing Factors Using Association Analysis and Their Implications for Development of Active Pedestrian Safety System, *Journal of the Transportation Research Board*, [Vol 2674, Issue 8, 2020](#).
<https://journals.sagepub.com/doi/10.1177/0361198120925472>

43. Cai Q., Abdel-Aty M., Castro S. (2021) Explore Effects of Bicycle Facilities and Exposure on Bicycle Safety at Intersections, *International Journal of Sustainable Transportation* Vol. 15, issue 8, pp. 592-603.
<https://www.tandfonline.com/doi/full/10.1080/15568318.2020.1772415>

44. Lee J., Abdel-Aty M., Cai Q. (2020) Investigation of Safety-in-numbers for Pedestrians and Bicyclists at a Macroscopic Level with Various Exposure Variables, *Journal of the Transportation Research Board*, 0361198120953795.

45. Cai Q., Abdel-Aty M., Yuan J, Lee J. (2020) Real-Time Crash Prediction on Expressways Using Deep Generative Models, *Transportation Research Part C: Emerging Technologies*, 117, 102697. <https://doi.org/10.1016/j.trc.2020.102697>

46. Li P., Abdel-Aty M., Cai Q., Yuan C. (2020) The Application of Novel Connected Vehicles Emulated Data on Real-Time Crash Potential Prediction for Arterials, *Accident Analysis and Prevention*, Special issue on Road Safety under the Environment of Intelligent Connected Vehicles, 144. <https://doi.org/10.1016/j.aap.2020.105658>

47. Yue L., Abdel-Aty M. (2020) Influence of Pedestrian-to-Vehicle Technology on Driver Response and Safety Benefits Considering Pre-Crash Scenario Heterogeneity, *Transportation Research Part F: Traffic Psychology and Behaviour*, 73, 50-65.

48. Xing L., Abdel-Aty M., Wu Y., Yuan J., He J. (2020) Time-varying Analysis of Traffic Conflicts at the Upstream Approach of Toll Plaza, *Accident Analysis and Prevention*, 141, 105539.

49. Al-Omari M., Abdel-Aty M., Lee J., Yue L., Abdelrahman A. (2020) Safety Evaluation of Median U-Turn Crossover-Based Intersections, *Journal of the Transportation Research Board*, 0361198120921158.

50. Montella A., Guida C., Mosca J., Lee J., Abdel-Aty M. (2020) Systemic Approach to Improve Safety of Urban Unsignalized Intersections: Development and Validation of a Safety Index, *Accident Analysis and Prevention*, 141, 105523

51. Li Y., Abdel-Aty M., Yuan J., Cheng Z., Lu J. (2020) Analyzing Traffic Violation Behavior at Urban Intersections: A Spatial-Temporal Kernel Density Estimation Approach Using Automated Enforcement System Data, *Accident Analysis and Prevention*, 141,105509.
doi:10.1016/j.aap.2020.105509

52. Feng M., Wang X., Lee J., Abdel-Aty M., Mao S. (2020) Transferability of Safety Performance Functions and Hotspot Identification for Freeways of the United States and China, *Accident Analysis and Prevention*, 139, 105493

53. Yue L., Abdel-Aty M. (2020) In-Depth Approach for Identifying Crash Causation Patterns and its Implications for Pedestrian Crash Prevention, *Journal of Safety Research*, 73, pp. 119-132

54. Zhang S., Abdel-Aty M., Yuan J. and Li P. (2020) Prediction of Pedestrian Crossing Intentions at Intersections Based on LSTM Recurrent Neural Network, *Journal of the Transportation Research Board*, Vol 2674, Issue 4, 2020
<https://journals.sagepub.com/doi/10.1177/0361198120912422>

55. Lee J., Abdel-Aty M., Nyame-Baafi, E. (2020) Investigating the Effect of Pavement Roughness on Freeway Safety using Data from Five States, *Journal of the Transportation Research Board*, 2674(2), pp. 127-134.

56. Mannering F., Shankar V., Bhat C., Abdel-Aty M. (2020) Big Data, Traditional Data and the Tradeoffs between Prediction and Causality in Highway-Safety Analysis, *Analytic Methods in Accident Research*, 25, 100113. doi:10.1016/j.amar.2020.100113

57. Formosa N., Quddus M., Ison S., Abdel-Aty M., Yuan J. (2020) Predicting real-time traffic conflicts using deep learning, *Accident Analysis and Prevention*, 136, 105429.

58. Chung W., Abdel-Aty M., Park H., Cai Q., Rahman MH. and Gong Y. (2020) Development of Decision Support System for Integrated Active Traffic Management Systems Considering Travel Time Reliability, *Journal of the Transportation Research Board*, 0361198120905591. *Transportation Research Record*, vol. 2674, 2: pp. 167-180.

59. Li P., Abdel-Aty M. and Yuan J. (2020) Real-Time Crash Risk Prediction on Arterials Based on LSTM-CNN, *Accident Analysis and Prevention*, 135, 105371.

60. Yue L., Abdel-Aty M., Wu Y. and Farid A. (2020) The Practical Effectiveness of Advanced Driver Assistance Systems at Different Roadway Facilities: System Limitation, Adoption and Usage, *IEEE Transactions on Intelligent Transportation Systems*, Vol. 21, Issue 9, Page(s): 3859 - 3870.

61. Gu X., Abdel-Aty M., Lee J., Xiang Q., and Ma Y. (2020) Identification of contributing factors for interchange crashes based on a quasi-induced exposure method. *Journal of Safety and Security*, 1-22. <https://doi.org/10.1080/19439962.2020.1812783>

62. Cai Q., Abdel-Aty M., Lee J. and Huang H. (2019). Integrating Macro-and Micro-Level Safety Analyses: A Bayesian Approach Incorporating Spatial Interaction. *Transportmetrica A: Transport Science*, 15(2), 285-306.

63. Park J., Abdel-Aty M., Wang L., Lee G. and Hong J. (2019) Influence of Multiple Freeway Design Features on Freight Traffic Safety, *Journal of Advanced Transportation*, vol. 2019, Article ID 5739496, 8 pages, 2019.

64. Lee J., Abdel-Aty M. and El-Urfali A. (2019) The Safety Implications of the Conversion of Continuous Green T-Intersections Back to Conventional T-Intersections, ASCE's Journal of Transportation Engineering, Part A: Systems, 146(4), 04020016.

65. Wang L., Zhong H., Ma W., Abdel-Aty M. and Park J. (2019) How Many Crashes Can Connected Vehicle and Automated Vehicle Technologies Prevent: a Meta-analysis, *Accident Analysis and Prevention*, 136, 105299.

66. Zhou H., Huang H., Xu P., Chang F. and Abdel-Aty M. (2019) Incorporating spatial effects into temporal dynamic of road traffic fatality risks: a case study on 48 lower states of the United States, 1975-2015, *Accident Analysis and Prevention*, 132, 105283.

67. Cai Q., Abdel-Aty M. and Lee J. (2019) Applying a Deep Learning Approach for Transportation Safety Planning by Using High-Resolution Transportation and Land Use Data, *Journal: Transportation Research Part A: Policy and Practice*, 127, pp. 71-85.

68. Wu Y., Abdel-Aty M., Wang L. and Rahman S. (2020) Combined connected vehicles and variable speed limit strategies to reduce rear-end crash risk under fog conditions, *Journal of Intelligent Transportation Systems: Technology, Planning, and Operations*, 24(5), 1-20. <https://doi.org/10.1080/15472450.2019.1634560>

69. Gong Y., Abdel-Aty M., Cai Q. and Rahman S. (2019) Decentralized Network Level Adaptive Signal Control by Multi-Agent Deep Reinforcement Learning Transportation Research Interdisciplinary Perspectives, *Transportation Research Interdisciplinary Perspectives*, Vol. 1. <https://doi.org/10.1016/j.trip.2019.100020>

70. Gong Y., Abdel-Aty M. and Park J. (2019) Evaluation and Augmentation of Traffic Data from Private Sector and Bluetooth Detection System on Arterials, *Journal of Intelligent Transportation Systems: Technology, Planning, and Operations*, pp 1-13. <https://doi.org/10.1080/15472450.2019.1632707>

71. Rahman S., Abdel-Aty M., Cai Q. and Hasan S. (2019) Applying Machine Learning Approaches to Analyze the Vulnerable Road-users' Crashes at Statewide Traffic Analysis Zones, *Journal of Safety Research*, 70, pp. 275-288 <https://doi.org/10.1016/j.jsr.2019.04.008> (IF=2.394)

72. Rahman R., Roy K., Abdel-Aty M. and Hasan S. (2019) Sharing Real-time Traffic Information with Travelers using Twitter: An Analysis of Effectiveness and Information Content, *Journal: Frontiers in Built Environment*, section Transportation and Transit Systems, Volume 5, 27 June 2019, Article number 83

73. Kim, S., Park, J., Abdel-Aty, M., Lee, S., & Kim, S. (2019, December). Influence of road lane reductions on motorised and non-motorised traffic safety. *Institution of Civil Engineers-Municipal Engineer* (Vol. 172, No. 4, pp. 233-238). Thomas Telford Lt

74. Wang L., Abdel-Aty M., Ma W., Hu J. and Zhong H. (2019) Quasi-Vehicle Trajectory-Based Real-time Safety Analysis for Expressways, *Transportation Research Part C*, Vol 103, June 2019, Pages 30-38.

75. Rahman H., Abdel-Aty M., Lee J. and Rahman S. (2019) Enhancing Traffic Safety at School Zones by Operation and Engineering Countermeasures: A Microscopic Simulation Approach, *Simulation Modelling Practice and Theory* 94, pp. 334-348.

76. Lee J, Abdel-Aty M., Huang H. and Cai Q. (2019) Transportation Safety Planning Approach for Pedestrians: An Integrated Framework of Modeling Walking Duration and Pedestrian Fatalities, *Journal of the Transportation Research Board*, 2673(4), pp. 898-906.

77. Yu R., Zheng Y., Qin Y. and Abdel-Aty M. (2019) Crash injury severity analyses with multilevel thresholds of change modelling approach for at-fault out-of-state drivers, *Journal of Transportation Safety and Security*, pp. 1-18. <https://doi.org/10.1080/19439962.2019.1579290>

78. Wu Y., Abdel-Aty M., Zheng O., Cai Q. and Yue L. (2019) Developing a crash warning system for the bike lane area at intersections with connected vehicles technology, *Journal of the Transportation Research Board*, 2673(4), pp. 47-58.

79. Yuan J., Abdel-Aty M., Gong Y. and Cai Q. (2019) Real-Time Crash Risk Prediction Using Long Short-Term Memory Recurrent Neural Network, *Journal of the Transportation Research Board*, 2673(4), pp. 314-326.

80. Chung W., Abdel-Aty M., Cai Q. and Ponnaluri (2019) A Method for Estimating Vehicle-to-Vehicle Travel Time Variability Models at the Link and Network Levels of

Freeways/Expressways through Censoring Mechanism, *Journal of the Transportation Research Board*, 2673(5), pp. 548-563

81. Rahman S., Abdel-Aty M., Lee J. and Rahman H. (2019) Safety Benefits of Arterials' Crash Risk under Connected and Automated Vehicles, *Transportation Research Part C*, 100, pp. 354-371.

82. Saad M., Abdel-Aty M., Lee J. and Cai Q. (2019) Bicycle Safety Analysis at Intersections Using Crowdsourced Data, *Journal of the Transportation Research Board*, 2673(4), pp. 1-14. <https://doi.org/10.1177/0361198119836764>

83. Yu R., Zheng, Y., Abdel-Aty, M., Gao, Z. (2019) Exploring Crash Mechanisms with Microscopic Traffic Flow Variables: A Hybrid Approach with Latent Class Logit and Path Analysis Models, *Accident Analysis and Prevention*, 125, pp. 70-78.

84. Lee J., Abdel-Aty M., Xu P. and Gong Y. (2019) Is the Safety-In-Numbers Effect Still Observed in Areas with Low Pedestrian Activities? A Case Study of a Suburban Area in the United States, *Accident Analysis and Prevention*, 125, pp. 116-123.

85. Xing L., He J., Abdel-Aty M., Cai Q., Li Y and Zheng O. (2019) Examining Traffic Conflicts of Up Stream Toll Plaza Area Using Vehicles' Trajectory Data, *Accident Analysis and Prevention*, 125, pp. 174-187.

86. Yuan J, Abdel-Aty M., Cai Q, and Lee J., (2019) Investigating Drivers' Mandatory Lane Change Behavior on the Weaving Section of Freeway with Managed Lane: A Driving Simulator Study, *Transportation Research Part F: Psychology and Behaviour*, [Volume 62](#), April 2019, Pages 11-32.

87. Lee J., Abdel-Aty M., de Blasis M. and Mattei I. (2019) International transferability of macro-level safety performance functions: a case study of the United States and Italy, *Transportation Safety and Environment*, Vol 00, No. 00, pp 1-11. doi: 10.1093/transp/tdz001

88. Hossain M., Abdel-Aty M., Quddus M., Sadeek S. and Muromachi Y. (2019) Real-time crash prediction models: state-of-the-art, design pathways and ubiquitous requirements, *Accident Analysis and Prevention*, 124, pp. 66-84.

89. Gu X., Abdel-Aty M., Xiang Q., Cai Q. and Yuan J. (2019) Utilizing UAV Video Data for In-depth Analysis of Drivers' Crash Risk at Interchange Merging Areas, *Accident Analysis and Prevention* 123, pp. 159-169.

90. Wang L., Abdel-Aty M., Lee J and Shi Q. (2019) Analysis of real-time crash risk for expressway ramps using traffic, geometric, trip generation, and socio-demographic predictors, Special Issue on 'Simulation of Traffic Safety in the Era of Advances in Technologies', *Accident Analysis and Prevention* 122, pp. 378-384

91. Saad M., Abdel-Aty M., Lee JY and Wang L. (2019) Integrated Safety and Operational Analysis of the Access Design of Managed Toll Lanes, *Journal of the Transportation Research Board*, 2673(2), pp. 127-136, <https://doi.org/10.1177/0361198118823502>

92. Yue L, Abdel-Aty M., Lee J. and Farid A. (2019) Effects of Signalization at Rural Intersections while Considering the effect on the Elderly Driving Population, *Journal of the Transportation Research Board*, 2673(2), pp. 743-757.

93. Farid A., Abdel-Aty M. and Lee J. (2019) Comparative Analysis of Multiple Techniques for Developing and Transferring Safety Performance Functions, *Accident Analysis and Prevention*, 122, pp. 85-98.

94. Alkahtani K., Abdel-Aty M. and Lee J. (2019) A Zonal Level Safety Investigation of Pedestrian Crashes in Riyadh, Saudi Arabia, *International Journal of Sustainable Transportation*, 13(4), pp. 255-267 DOI: [10.1080/15568318.2018.1463417](https://doi.org/10.1080/15568318.2018.1463417)

95. Saad M., Abdel-Aty M. and Lee J. (2019) Analysis of Driving Behavior at Expressway Toll Plazas, *Transportation Research F*, 61, pp. 163-177.

96. Yuan J, Abdel-Aty M., Wang L, Lee J., Wang X. and Yu R. (2018) Utilizing Bluetooth and Adaptive Signal Control Data for Real-Time Safety Analysis on Urban Arterials, *Transportation Research C*, Vol 97, pp. 114-127.

97. Park J, Abdel-Aty M., Wu Y. and Mattei I. (2018) Enhancing in-vehicle driving assistance information under connected vehicle environment, *IEEE Transactions on Intelligent Transportation Systems*, Vol PP, Issue 99, pp 1-10.

98. Park J, Abdel-Aty M. and Lee J. (2019) School Zone Safety Modeling in Countermeasure Evaluation and Decision, *Transportmetrica A: Transport Science*, 15(2), pp. 586-601. DOI: 10.1080/23249935.2018.1519646

99. Wu Y, Abdel-Aty M., Park JY and Zhu J. (2018) Effects of Crash Warning Systems on Rear-End Crash Avoidance Behavior under Fog Conditions, *Transportation Research Part C* 95, pp. 481-492.

100. Al-Arifi S., Abdel-Aty M. and Lee J. (2018) A Bayesian Multivariate Spatial Joint Model for Predicting Crash Counts by Crash Type at Intersections and Segments Along Corridors, *Accident Analysis and Prevention*, 119 pp. 263-273.

101. Yuan J. and Abdel-Aty M. (2018) Approach-Level Real-Time Crash Risk Analysis for Signalized Intersections, *Accident Analysis and Prevention*, [Volume 119](#), October 2018, Pages 274-289

102. Farid A., Abdel-Aty M. and Lee J. (2018) A New Approach for Calibrating Safety Performance Functions, *Accident Analysis and Prevention*, [Volume 119](#), October 2018, Pages 188-194

103. Saad M., Abdel-Aty M., Lee J. and Wang L. (2018) Safety Analysis of Access Zone Design for Managed Toll Lanes on Freeways, *ASCE Journal of Transportation Engineering*, Part A: Systems, volume 144, issue 11.

104. Cai Q., Abdel-Aty M., Lee J., Wang L. and Wang X. (2018) Developing a Grouped Random Parameters Multivariate Spatial Model to Explore Zonal Effects for Segment and Intersection Crash Modeling, Journal: *Analytic Methods in Accident Research*, [Volume 19](#), September 2018, Pages 1-15

105. Karaaslan, E., Noori, M., Lee, J., Wang, L., Tatari, O., and Abdel-Aty, M. (2018). "Modeling the effect of electric vehicle adoption on pedestrian traffic safety: an agent-based approach." *Transportation Research Part C*, Elsevier, 93, pp. 198-210

106. Lee J., Abdel-Aty M. and Shah M.I. (2018) Evaluation of Surrogate Measures for Pedestrian Trips at Intersections and Crash Modeling, *Accident Analysis and Prevention*, 130, 91-98

107. Cai Q., Abdel-Aty M., Lee J. and Huang H. (2018) Integrating Macro and Micro Level Safety Analyses: A Bayesian Approach Incorporating Spatial Interaction, *Transportmetrica A: Transport Science*, 15(2), pp. 285-306.

108. Farid A., Abdel-Aty M. and Lee J. (2018) Transferring and Calibrating Safety Performance Functions among Multiple States, Connectivity and Low Level Automation Systems, *Accident Analysis and Prevention*, Volume 117, August 2018, Pages 276-287

109. Lee J., Abdel-Aty M., Cai Q. and Wang L. (2018) Effects of Emergency Medical Services Times on Traffic Injury Severity: A Random-Effects Ordered Probit Approach, *Traffic Injury Prevention* 19 (6), 577-581.

110. Fountas G., Anastasopoulos P. and Abdel-Aty M. (2018) Analysis of accident injury-severities using a correlated random parameters ordered probit approach with time variant covariates, *Analytic Methods in Accident Research* 18, pp. 57-68.

111. Yue L., Abdel-Aty M., Wu Y. and Wang L. (2018) Assessment of the Safety Benefits of Vehicles' Advanced Driver Assistance, Connectivity and Low Level Automation Systems, *Accident Analysis and Prevention*, Volume 117, August 2018, Pages 55-64.

112. Yasmin S., Eluru N., Wang L. and Abdel-Aty M. (2018) A Joint Framework for Static and Real-time Crash Risk Analysis, *Analytic Methods in Accident Research*, [Volume 18](#), June 2018, Pages 45–56.

113. Abuzwidah M. and Abdel-Aty M. (2018) Crash Risk Analysis of Different Designs of Toll Plazas, *Journal of Safety Science*, [Volume 107](#), August 2018, Pages 77–84.

114. Dimitriou L., Stylianou K. and Abdel-Aty M. (2018) Assessing Rear-End Crash Potential in Urban Locations Based on Vehicle-by-Vehicle Interactions, Geometric Characteristics and Operational Conditions, *Accident Analysis and Prevention*, 118, pp. 221-235

115. Cai Q., Saad M., Abdel-Aty M., Yuan J. and Lee J. (2018) Safety impact of weaving distance on freeway facilities with managed lanes using both microscopic traffic and driving simulations, *Journal of the Transportation Research Board*, 2672(39), pp.130-141.

116. Chung W., Abdel-Aty M., Park J. and Ponnaluri R. (2018) A comparative study between private-sector and automated vehicle identification system data through various travel time reliability, *Journal of the Transportation Research Board*, 2672(42), pp.103-114.

117. Lee J., Abdel-Aty M., Cai Q. and Wang L. (2018) Analysis of Fatal Traffic Crash-Reporting and Reporting-Arrival Time Intervals of Emergency Medical Services, *Journal of the Transportation Research Board*, 2672(32), 61-71.

118. Lee, J., Abdel-Aty, M., Cai, Q., Wang, L., and Huang, H. (2018). Integrated modeling approach for non-motorized mode trips and fatal crashes in the framework of transportation safety planning. *Transportation research record*, 2672(32), 49-60.

119. Al-Arifi S., Abdel-Aty M., Lee J. and Wang X. (2018) Exploring the Effect of Different Neighboring Structures on Spatial Hierarchical Joint Crash Frequency Models, *Journal of the Transportation Research Board*, 2672(38), 210-222.

120. Rahman S., Abdel-Aty M., Wang L. and Lee J. (2018) Understanding the Highway Safety Benefits of Different Approaches of Connected Vehicles in Reduced Visibility Conditions, *Journal of the Transportation Research Board*, 2672(19), pp. 91-101

121. Rahman S. and Abdel-Aty M. (2018) Longitudinal Safety Evaluation of Connected Vehicles' Platooning on Expressways, *Accident Analysis and Prevention*, [Volume 117](#), August 2018, Pages 381-391.

122. Wu Y., Abdel-Aty M. (2018) Developing an Algorithm to Assess the Rear-end Collision Risk under Fog Conditions using Real-time Data, *Transportation Research C*, Vol. 87, 11-25.

123. Wang L., Abdel-Aty M., Wang X. and Yu R. (2018) Analysis and Comparison of Safety Models Using Average Daily, Average Hourly, and Microscopic Traffic, *Accident Analysis and Prevention*, Vol 111, pp. 271-279.

124. Chung W., Abdel-Aty M. and Lee J. (2018) Spatial Analysis of the Effective Coverage of Land-Based Weather Stations for Traffic Crashes, *Journal of Applied Geography*, Volume 90, pp. 17-27.

125. Lee J. and Abdel-Aty M. (2018) Macro-Level Analysis of Bicycle Safety: Focusing on the Characteristics of Both Crash Location and Residence, *International Journal of Sustainable Transportation*, 12(8), 553-560.

126. Huang H, Jiang M, Han C, XU G, Wong SC, Abdel-Aty M. (2018) A Traffic Assignment Method for Transport Network Considering Safety Reliability with Heterogeneous Risk Aversion, *China Journal of Highway and Transport*, 31(4), pp. 312-321. IF 2.652

127. Lee J., Yasmin, S., Eluru, N., Abdel-Aty, M. and Cai Q. (2018). Analysis of crash proportion by vehicle type at traffic analysis zone level: a mixed fractional split multinomial logit modeling approach with spatial effects. *Accident Analysis and Prevention*, Vol. 111, pp. 12-22.

128. Cai Q., Abdel-Aty M. and Lee J (2017) Macro-level vulnerable road users crash analysis: A Bayesian joint modeling approach of frequency and proportion, *Accident Analysis and Prevention*, Volume 107, October 2017, Pages 11-19

129. Wu Y., Abdel-Aty M., Park J and Selby R (2018) Effects of real-time warning systems on driving under fog conditions using an empirically supported speed choice modeling framework, *Transportation Research Part C Vol. 86*, pp. 97-110.

130. Wang L. and Abdel-Aty M. (2017) Implementation of Variable Speed Limits to Improve Safety of Congested Expressway Weaving Segments in Microsimulation, *Transportation Research Procedia*, Volume 27, Elsevier, open access, pp. 577-584.

131. Wu Y., Abdel-Aty M., Ding Y., Jia B., Shi Q. and Yan XD. (2018) Comparison of Proposed Countermeasures for Dilemma Zone at Signalized Intersections Based on Cellular Automata Simulations, Special Issue on 'Simulation of Traffic Safety in the Era of Advances in Technologies, *Accident Analysis and Prevention*, Volume 116, July 2018, Pages 69-78.

132. Peng Y., Abdel-Aty M., Lee J and Zou Y. (2018) Analysis of the Impact of Fog-related Reduced Visibility on Traffic Parameters, *ASCE Journal of Transportation Engineering, Part A: Systems* 144(2),04017077.

133. Wu Y., Abdel-Aty M. and Lee J. (2018) Crash Risk Analysis during Fog Conditions using Real-Time Traffic Data, Special Issue RS5C, *Accident Analysis and Prevention*, Volume 114, May 2018, Pages 4-11

134. Alarifi S., Abdel-Aty M., Lee J and Park J. (2017) Crash Modeling for Intersections and Segments along Corridors: A Bayesian Multilevel Joint Model with Random Parameters, *Analytic Methods in Accident Research* Vol. 16, pp. 48-59.

135. Alarifi S., Alkahtani K., Abdel-Aty M., Mohammed A., Khair S. and Mojil A. (2017) Corridor Safety Evaluation in a Developing Country using a Survey Based Approach, *Journal of Safety and Security*, pp. 1-18.

136. Farid A., Abdel-Aty M., Lee J and Eluru N. (2017) Application of Bayesian Informative Priors to Enhance the Transferability of Safety Performance Functions, *Journal of Safety Research*, Vol. 62, 155-161.

137. Wang J., Abdel-Aty M. and Wang L. (2017) Examination of the Reliability of the Crash Modification Factors using Empirical Bayes Method with Resampling Technique, *Accident Analysis & Prevention* Vol. 104, pp. 96-105.

138. Wang L., Abdel-Aty M. and Lee J (2017) Safety Analytics for Integrating Crash Frequency and Real-Time Risk Modeling for Expressways, *Accident Analysis & Prevention* Vol. 104, pp. 58-64.

139. Lee J., Abdel-Aty M. and Cai Q. (2017) Intersection Crash Prediction Modeling with Macro-Level Data from Various Geographical Units, *Accident Analysis and Prevention*, Vol 102, pp. 213-226.

140. Cai Q., Abdel-Aty M., Lee J. and Eluru N. (2017) Comparative Analysis of Zonal Systems for Macro-level Crash Modeling, *Journal of Safety Research*, Vol 61, pp 157-166.

141. Park J., Abdel-Aty M. and Wang J. (2017) Time Series Trends of the Safety Effects of Pavement Resurfacing, *Accident Analysis & Prevention*, Vol 101, pp. 78-86.

142. Yu R., Wang X and Abdel-Aty M. (2017) A Hybrid Latent Class Analysis Modeling Approach to Analyze Urban Expressway Crash Risk, *Accident Analysis & Prevention*, Vol. 101, pp. 37-43.

143. Alirezai, M., Onat, N. C., Tatari, O., and Abdel-Aty, M. (2017). The climate change-road safety-economy nexus: a system dynamics approach to understanding complex interdependencies. Special Issue on The Current State-of-the-Art of System Dynamics Modelling and Simulation, *Systems*, MDPI, 5(1). DOI: 10.3390/systems5010006

144. Wang L., Abdel-Aty M. and Lee J. (2017) Implementation of Active Traffic Management Strategies for Safety of a Congested Expressway Weaving Segment, *Journal of the Transportation Research Board* No. 2635.
Best paper award, TRB Safety Management Committee, 2017

145. Park J. and Abdel-Aty M. (2017) Alternative Approach for Combining Multiple Crash Modification Factors Using Adjustment Function and Analytic Hierarchy Process, *Journal of the Transportation Research Board* No. 2636.

146. Wang J, Abdel-Aty M. and Lee J. (2017) Evaluation of Safety Performance Functions Based on Experimental Design using a Cross-Validation Method, *Journal of the Transportation Research Board* No. 2636.

147. Lee J., Abdel-Aty M., Wang J. and Lee C. (2017) Long-Term Impacts of the Universal Helmet Law Changes on Motorcyclist Fatal Crashes: Comparison Group and Empirical Bayes Approach, *Journal of the Transportation Research Board* No. 2637.

148. Park J. and Abdel-Aty M. (2017) Safety Performance of Combinations of Traffic and Roadway Cross Sectional Design Elements at Straight and Curved Segments, *ASCE Journal of Transportation Engineering*, Part A: Systems, Volume 143, Issue 6.
Best 2017 ASCE Journal of Transportation Engineering

149. Zeng Q., Wen H., Huang H. and Abdel-Aty M. (2017) A Bayesian spatial random parameters Tobit model for analyzing crash rates on roadway segments, *Accident Analysis & Prevention*, Vol. 100, pp. 37-43.

150. Peng Y., Abdel-Aty M., Shi Q. and Yu R. (2016) Assessing the Impact of Reduced Visibility on Traffic Crash Risk using Microscopic Data and Surrogate Safety Measures, *Transportation Research Part C: Emerging Technologies* Vol. 74, pp. 295-305

151. Park J., Abdel-Aty M. and Lee J. (2016) Use of Empirical and Full Bayes Before-After Approaches to Estimate the Safety Effects of Roadside Barriers with Different Crash Conditions, *Journal of Safety Research*, Volume 58, September 2016, Pages 31-40.

152. Huang H., Song B., Xu P., Zeng Q., Lee J. And Abdel-Aty M. (2016) Macro and Micro Models for Zonal Crash Prediction with Application in Hot Zones Identification, *Journal of Transport Geography*, Volume 54, June 2016, Pages 248-256.

153. Park J. and Abdel-Aty M. (2016) Evaluation of Safety Effectiveness of Multiple Cross Sectional Features on Urban Arterials, *Accident Analysis & Prevention*, Vol. 92, July 2016, pp. 245-255.

154. Cai Q., Lee J., Eluru N. and Abdel-Aty M. (2016) Macro-level Pedestrian and Bicycle Crash Analysis: Incorporating Spatial Spillover Effects in Dual State Count Models, *Accident Analysis & Prevention*, Volume 93, August 2016, pp. 14-22.

155. Dong N., Huang H., Lee J., Gao M. and Abdel-Aty M. (2016) Macroscopic Hotspots Identification: A Bayesian Spatio-temporal Interaction Approach, *Accident Analysis & Prevention*, Vol. 92, July 2016, pp. 256-264.

156. Farid A., Abdel-Aty M., Lee J., Eluru N. and Wang J. (2016) Exploring the Transferability of Safety Performance Functions, *Accident Analysis & Prevention*, Vol. 94, 2016, pp. 143-152.

157. Shi Q. and Abdel-Aty M. (2016) Evaluation of the Impact of Travel Time Reliability on Urban Expressway Traffic Safety, *Journal of the Transportation Research Board*, No. 2582, pp. 8-17.

158. Yasmin S., Eluru N., Lee J. and Abdel-Aty M. (2016) An Ordered Fractional Split Approach for Aggregate Injury Severity Modeling, *Journal of the Transportation Research Board*, No. 2583, pp. 119-126.

2016 Best Paper Award from the Transportation Research Board (TRB) Committee on Statistical Methods (ABJ80)

159. Park J.. And Abdel-Aty M. (2016) Safety Effects for Widening Shoulder Width on Rural Multi-lane Roads: Developing Crash Modification Functions with Multivariate Adaptive Regression Splines, *Journal of the Transportation Research Board*, No. 2583, pp. 34-41.

160. Wang L. and Abdel-Aty M. (2016) Microscopic Safety Evaluation and Prediction for Freeway-to-Freeway Interchange Ramps, *Journal of the Transportation Research Board*, No. 2583, pp. 56-64.

161. Wang J., Abdel-Aty M. and Lee J. (2016) Examination of the Transferability of Safety Performance Functions for Developing Crash Modification Factors using Empirical Bayes Method, *Journal of the Transportation Research Board*, No 2583, pp. 73-80.

162. Nashed T., Yasmin N., Eluru N., Lee J. and Abdel-Aty M. (2016) Joint Modeling of Pedestrian and Bicycle Crashes: Copula-Based Approach, *Journal of the Transportation Research Board*, No 2601, pp. 119-127

163. Siddiqui C. and Abdel-Aty M. (2016) Geographical Boundary Dependency Versus Roadway Hierarchy in Macroscopic Safety Modeling, *Journal of the Transportation Research Board*, No. 2601, pp. 59-71.

164. Shi Q. and Abdel-Aty M. (2016) A Bayesian Ridge Regression Analysis of Congestion's Impact on Urban Expressway Safety, *Accident Analysis & Prevention*, Vol 88, pp. 124-137.

165. Yang X., Abdel-Aty M., Jia B. and Peng Y. (2016) The Effects of Traffic Wardens on the Red-light Infringement Behavior of Vulnerable Road Users, *Transportation Research F*, Vol. 37, pp. 52-63.

166. Shi Q., Abdel-Aty M. and Yu R. (2016) Multi-level Bayesian Safety Analysis with unprocessed Automatic Vehicle Identification data for an Urban Expressway, *Accident Analysis & Prevention*, Vol 88, pp. 68-76.

167. Yu R., Wang X., Yang K. and Abdel-Aty M. (2015) Crash Risk Analysis for Shanghai Urban Expressways: A Bayesian Semi-parametric Modeling Approach, *Accident Analysis & Prevention*, Volume 95, Part B, October 2016, Pages 495-502.

168. Wang L., Abdel-Aty M., Shi Q. and Park J. (2015) Real-time Crash Prediction for Expressway Weaving Segments, *Transportation Research C*, Volume 61, December 2015, Pages 1-10

169. Hu J., Jiang X., Abdel-Aty M. and Lee J. (2016) Investigating Macro-level Hotzone Identification and Variable Importance Using Big Data: A Random Forest Models Approach, *Neurocomputing* Vol. 181, pp. 55-63.

170. Park J and Abdel-Aty M. (2015) Assessing the Safety Effects of Multiple Roadside Treatments using Parametric and Nonparametric Approaches, *Accident Analysis & Prevention* 83, pp. 203-213.

171. Yang X., Abdel-Aty M., Huan M., Peng Y. and Gao Z. (2015) An accelerated failure time model for investigating pedestrian crossing behavior and waiting times at signalized intersections, *Accident Analysis & Prevention*, Volume 82, pp. 154-162.

172. Lee J., Nam B. and Abdel-Aty M. (2015) Effects of Pavement Surface Conditions on Traffic Crash Severity, *ASCE Journal of Transportation Engineering*, Vol 141, Issue 10, pp. 04015020-1 - 11.

173. Abuzwidah M. and Abdel-Aty M. (2015) Safety Assessment of the Conversion of Toll Plazas to All-Electronic Toll Collection System, *Accident Analysis & Prevention*, Volume 80, July 2015, Pages 153-161.

174. Park J., Abdel-Aty M., Wang J. and Lee C. (2015) Assessment of Safety Effects for Widening Urban Roadways in Developing Crash Modification Functions using Nonlinearizing Link Functions, *Accident Analysis & Prevention*, Vol 79, pp 80-87.

175. Wang J., Abdel-Aty M., Park J., Lee C. and Kuo P. (2015) Estimating Safety Performance Trends over Time for Treatments at Intersections in Florida, *Accident Analysis & Prevention*, Volume 80, July 2015, Pages 37-47.

176. Lee J., Abdel-Aty M. and Jiang X. (2015) Multivariate Crash Modeling for Motor Vehicle and Non-Motorized Modes at the Macroscopic Level, *Accident Analysis & Prevention*, Volume 78, May 2015, Pages 146-154.
Among the 25 most cited articles since 2015.

177. Wang L., Abdel-Aty M. and Shi Q. (2015) Predicting Crashes on Expressway Ramps with Real-Time Traffic and Weather Data, *Journal of the Transportation Research Board*, Vol. 2514, pp. 32-38.

178. Al Kaff K. and Abdel-Aty M. (2015) Transferability and Calibration of Highway Safety Manual Performance Functions and Development of New Models for Urban Four-Lane Divided Roads in Riyadh, *Journal of the Transportation Research Board* No. 2515, pp.70-77.

179. Ahmed M., Abdel-Aty M. and Park J. (2015) Evaluation of the Safety Effectiveness of the Conversion of Two-Lane Roadways to Four-Lane Divided Roadways: Full Bayes vs. Empirical Bayes, *Journal of the Transportation Research Board* Journal of the *Transportation Research Board* No. 2515, pp.70-77.

180. Park J. and Abdel-Aty M. (2015) Development of Adjustment Functions to Assess Combined Safety Effects of Multiple Treatments on Rural Two-lane Roadways, *Accident Analysis & Prevention*, Vol 75, pp.310-319.

181. Shi Q. and Abdel-Aty M. (2015) Big Data applications in real-time traffic operation and safety monitoring and improvement on urban expressways, *Transportation Research C*, Vol 58 part B, pp 380-394.

182. Park J., Abdel-Aty M., Lee J. and Lee C. (2015) Developing Crash Modification Functions to Assess Safety Effects of Adding Bike Lanes for Urban Arterials with Different Roadway and Socio-economic Characteristics, *Accident Analysis & Prevention*, Volume 74, pp. 179-191.

183. Yang X., Huan M., Abdel-Aty M., Peng Y. and Gao Z. (2015) A hazard-based duration model for analyzing crossing behavior of cyclists and electric bike riders at signalized intersections, *Accident Analysis & Prevention*, Volume 74, January 2015, Pages 33-41.

184. Lee J., Abdel-Aty M., Choi K. and Huang H. (2015) Multi-level Hot Zone Identification for Pedestrian Safety, *Accident Analysis & Prevention*, Volume 76, March 2015, Pages 64-73.

185. Lee C., Abdel-Aty M., Park J. and Wang J. (2015) Development of crash modification factors for changing lane width on roadway segments using generalized nonlinear models, *Accident Analysis & Prevention*, Volume 76, March 2015, Pages 83-91.

186. Yu R., Xiong Y. and Abdel-Aty M. (2014) A Correlated Random Parameter Approach to Investigate the Effects of Weather Conditions on Crash Risk for a Mountainous Freeway, *Transportation Research C*, Volume 50, January 2015, Pages 68-77.

187. Ahmed M., Abdel-Aty M., Lee J. and Yu R. (2014) Real-Time Assessment of Fog-Related Crashes Using Weather Airport Data: A Feasibility Analysis, *Accident Analysis & Prevention*, Volume 72, November 2014, Pages 309-317.

188. Ahmed M. and Abdel-Aty M. (2015) Evaluation and spatial analysis of automated red-light running enforcement cameras, *Transportation Research C*, Volume 50, January 2015, Pages 130-140.

189. Yu R. and Abdel-Aty M. (2014) An Optimal Variable Speed Limits System to Ameliorate Traffic Safety Risk, *Transportation Research C*, Volume 46, September 2014, Pages 235-246.

190. Lee J., Abdel-Aty M. and Jiang J. (2014) Development of Zone System for Macro-level Traffic Safety Analysis, *Journal of Transport Geography*, Volume 38, June 2014, Pages 13-21.

191. Xu P., Huang H., Dong N. and Abdel-Aty M. (2014) Sensitivity Analysis in the Context of Regional Safety Modeling: Identifying and Assessing the Modifiable Areal Unit Problem, *Accident Analysis & Prevention*, Vol. 70, pp. 110-120.

192. Park J., Abdel-Aty M. and Lee C. (2014) Exploration and Comparison of Crash Modification Factors for Multiple Treatments on Rural Multilane Roadways, *Accident Analysis & Prevention* 70, pp.167-177.

193. Lee J., Abdel-Aty M. and Choi K. (2014) Analysis of Residence Characteristics of At-Fault Drivers in Traffic Crashes, *Journal of Safety Science*, Volume 68, October 2014, Pages 6-13.

194. Wang X., Xie K., Abdel-Aty M., Chen X. and Tremont P. (2014) A Systematic Approach for Hazardous Intersection Identification and Countermeasure Development, *ASCE Journal of Transportation Engineering*, Vol 140, Issue 6.

195. Jiang X., Abdel-Aty M., and Alamili S. (2014) Application of Poisson Random Effect Models for Highway Network Screening, *Accident Analysis & Prevention*, Volume 63, February 2014, Pages 74-82.

196. Yu R. and Abdel-Aty M. (2014) Analyzing Crash Injury Severity for a Mountainous Freeway Incorporating Real-time Traffic and Weather Data, *Journal of Safety Science*, Volume 63, March 2014, Pages 50-56.

197. Abuzwidah M., Abdel-Aty M., and Ahmed M. (2014) Safety Evaluation of Hybrid Open Road Tolling Plazas, *Journal of the Transportation Research Board*, No. 2435. Pp. 53-60.

198. Yu R., Abdel-Aty M., Ahmed M. and Wang X. (2014) Utilizing Microscopic Traffic and Weather Data to Analyze Real-Time Crash Patterns in the Context of Active Traffic

Management, *IEEE Transactions on Intelligent Transportation Systems*, Volume 15, No. 1, pp. 205-213, Feb 2014.

199. Yu R. and Abdel-Aty M. (2014) Using Hierarchical Bayesian Binary Probit Models to Analyze Crash Injury Severity on High Speed Facilities with Real-time Traffic Data, *Accident Analysis & Prevention*, Volume 62, January 2014, Pages 161-167.

200. Ahmed M., Abdel-Aty M., Shi Q. and Abuzwidah M (2014), Synthesis of State-of-the-Art in Visibility Detection Systems' Applications and Research, *Journal of Safety and Security*, Volume 6, Issue 3, pp. 183-206.

201. Huang H., Hu S. and Abdel-Aty M. (2014) Indexing Crash Worthiness and Crash Aggressivity by Major Car Brands, *Journal of Safety Science*, Volume 62, February 2014, Pages 339-347.

202. Siddiqui C., Abdel-Aty M. and Choi K. (2014) Implications of Pedestrian Safety Planning Factors in Areas with Minority and Low Income Populations, *International Journal of Sustainable Transportation*, Volume 8, Issue 5, September 2014, pages 360-381.

203. Huang H., Xu P., Ming M. and Abdel-Aty M. (2014) Recent Theoretical Research on Transportation Safety Planning, *China Journal of Highway and Transport*, Vol. 27, Issue 9, pp. 90-97.

204. Wu J., Abdel-Aty M., Yu R. and Gao Z. (2013) A Novel Visible Network Approach for Freeway Crash Analysis, *Transportation Research C*, Volume 36, November 2013, Pages 72-82.

205. Yu R. and Abdel-Aty M. (2013) Investigating the Different Characteristics of Weekday and Weekend Crashes, *Journal of Safety Research*, Vol. 46, pp. 91-97.

206. Yu R. and Abdel-Aty M. (2013) Multi-level Bayesian Analyses for Single- and Multi-Vehicle Freeway Crashes, *Accident Analysis & Prevention*, Vol. 58, pp. 97-105.

207. Yu R. and Abdel-Aty M. (2013) Investigating Different Approaches to Develop Informative Priors in Hierarchical Bayesian Safety Performance Functions, *Accident Analysis & Prevention*, Vol. 56, pp. 51-58.

208. Yu R., Shi Q. and Abdel-Aty M. (2013) Feasibility of Incorporating Reliability Analysis in Traffic Safety Investigation, *Journal of the Transportation Research Board*, Vol. 2386, pp. 35-41.

209. Ahmed M. and Abdel-Aty M. (2013) Application of Stochastic Gradient Boosting Technique to Enhance Reliability of Real-Time Risk Assessment Using Automatic Vehicle Identification and Remote Traffic Microwave Sensor Data, *Journal of the Transportation Research Board*, Vol. 2386, pp. 26-34.

210. Abdel-Aty M., Lee J., Siddiqui C. and Choi K. (2013) Geographical Unit Based Analysis in the context of Transportation Safety Planning, *Transportation Research Part A: Policy and Practice*, Vol 49 (2013), pp. 62-75.

211. Wang X., Wu X., Abdel-Aty M. and Tremont P. (2013) Investigation of Road Network Features and Safety Performance, *Accident Analysis & Prevention*, Vol. 56, pp. 22-31.

212. Hassan H. and Abdel-Aty M. (2013) Predicting Reduced Visibility Related Crashes on Freeways Using Real-Time Traffic Flow Data, *Journal of Safety Research*, Volume 45, June 2013, pp. 29-36.

213. Yu R. and Abdel-Aty M. (2013) Utilizing Support Vector Machine in Real-time Crash Risk Evaluation, *Accident Analysis & Prevention*, Vol.51, pp.252-259. 5year IF:3.224

214. Yu R., Abdel-Aty M. and Ahmed M. (2013) Bayesian Random Effect Models Incorporating Real-time Weather and Traffic Data to Investigate Mountainous Freeway

Hazardous Factors, *Accident Analysis & Prevention*, Vol. 50, pp.371-376.

One of the most highly cited papers during 2014, 2015 and up until June 2016 (Elsevier).

215. Ahmed M. and Abdel-Aty M. (2013) A Data Fusion Framework for Real-Time Risk Assessment on Freeways, *Transportation Research Part C, Emerging Technologies*, Volume 26, January 2013, Pages 203-213.

216. Hassan H. and Abdel-Aty M. (2013) Exploring the Safety Implications of Young Drivers' Behavior, Attitudes and Perceptions, *Accident Analysis & Prevention*, Volume 50, January 2013, Pages 361-370.

217. Abdel-Aty M., Hassan H., Ahmed M. and AlGhamdi A. (2012) Real-Time Prediction of Visibility Related Crashes, *Transportation Research Part C, Emerging Technologies*, Volume 24, pp. 288-298.

218. Hassan H., Abdel-Aty M., Choi K. and AlGadhi S. (2012) Drivers' Behavior and Preferences of CMS and VSL Under Reduced Visibility Conditions, *Journal of Intelligent Transportation Systems*, Volume 16, Issue 3, pp.132–146.

219. Siddiqui C. and Abdel-Aty M. (2012) Nature of Modeling Boundary Crashes at Zones, Preprint No. TRB 12-0242, Journal of the *Transportation Research Board*, No. 2299, pp. 31-40.

220. Ahmed M., Abdel-Aty M. and Yu R. (2012) Bayesian Updating Approach for Real-time Safety Evaluation Using AVI Data, Journal of the *Transportation Research Board*, Vol. 2280, pp. 60-67.

221. Ahmed M., Abdel-Aty M. and Yu R. (2012) Assessment of the Interaction between Crash Occurrence, Mountainous Freeway Geometry, Real-Time Weather and AVI Traffic Data, *Journal of the Transportation Research Board*, Vol. 2280, pp. 51-59.

222. Wang X., Jin Y., Abdel-Aty M. and Tremont P. (2012) Macro Level Model Development for Safety Assessment of Road Network Structures, *Journal of the Transportation Research Board*, Vol. 2280, pp. 100-109.

223. Haleem K and Abdel-Aty M. (2012) Association between Access Management and Traffic Safety: Median Classification and Spatial Effect, *ITE Journal*, Vol 82, No. 4, pp. 22-27.

224. Siddiqui C., Abdel-Aty M. and Anjuman T. (2012) Parking Related Crash Characteristics, *ITE Journal*, Vol. 82 No. 3, pp. 33-35.

225. Persaud V., Oloufa A. and Abdel-Aty M. (2012) Dynamic Speed Monitoring on Sharp Curves Utilizing a 3 Wireless Solar Powered Dynamic Speed Monitoring System, *ITE Journal*, Vol. 82, No. 7, pp. 24-29.

226. Haleem K. and Abdel-Aty M. (2012) Application of GLASSO in Variable Selection and Crash Prediction at Unsignalized Intersections, *ASCE Journal of Transportation Engineering*, Jul 2012, Vol. 138, No. 7, pp. 949-960.

227. Ahmed M. and Abdel-Aty M. (2012) The Viability of Using Automatic Vehicle Identification Data for Real-Time Crash Prediction, *IEEE Transactions on Intelligent Transportation Systems*, Vol 13, No. 2, pp. 459-468.

228. Siddiqui C., Abdel-Aty M. and Choi K. (2011) Macroscopic Spatial Analysis of Pedestrian and Bicycle Crashes, *Accident Analysis & Prevention*, Elsevier, Volume 45, pp 382-391.

229. Hassan H. and Abdel-Aty M. (2011) Analysis of Drivers' Behavior under Reduced Visibility Conditions Using a Structural Equation Modeling Approach, *Transportation Research Part F*, Vol. 14, Issue 6, pp. 614-625. IF: 1.577, 5year IF:2.354

230. Siddiqui C., Abdel-Aty M. and Huang H. (2011) Aggregate Non Parametric Safety Analysis of Traffic Zones, *Accident Analysis & Prevention*, Volume 45, pp. 317-325.

231. Yan X., Abdel-Aty M., Guo D. and Radwan E. (2011) Visualization of Signalized Intersections in Driving Simulator and Validity of Driving Behaviors in Virtual Environments, *Advances in Transportation Studies an International Journal*, Volume 26, 2012, pp 17-28.

232. Abdel-Aty M., Ekram A., Huang H. and Choi K. (2011) A Study on Crashes Related to Visibility Obstruction Due to Fog and Smoke, *Accident Analysis & Prevention*, Elsevier, Vol. 43, Issue 5, Sep. 2011, pp. 1730– 1737.

233. Ahmed M., Huang H., Abdel-Aty M. and Guevara B. (2011) Exploring a Bayesian Hierarchical Approach for Developing Safety Performance Functions for a Mountainous Freeway, *Accident Analysis & Prevention*, Elsevier, Volume 43, Issue 4, July 2011, Pages 1581-1589.

234. Yan X., Ming M., Huang H., Abdel-Aty M., Wu C. (2011) Motor Vehicle-Bicycle Crashes in Beijing: Irregular Maneuvers, Crash Patterns, and Injury Severity, *Accident Analysis & Prevention*, Elsevier, Volume 43, Issue 5, September 2011, Pages 1751-1758.

235. Das A. and Abdel-Aty M. (2011) A Combined Frequency-Severity Approach for the Analysis of Rear End Crashes on Urban Arterials, *Safety Science*, Vol. 49, Issues 8-9, October 2011, pp. 1156–1163.

236. Abdel-Aty M., Siddiqui C., Huang H. and Wang X. (2011) Integrating Trip And Roadway Characteristics In Managing Safety At Traffic Analysis Zones, *Journal of the Transportation Research Board*, No. 2213, pp. 20-28.

237. Huang H., Siddiqui C and Abdel-Aty M. (2011) Indexing Crash Worthiness and Crash Aggressivity by Vehicle Type, *Accident Analysis & Prevention*, Elsevier, Volume 43, Issue 4, July 2011, Pages 1364-1370.

238. Pande A., Das A., Abdel-Aty M. and Hassan H. (2011) Real-time Crash Risk Estimation: Are All Freeways Created Equal?, *Journal of the Transportation Research Board*, No. 2237, pp. 60–66.

239. Park P. and Abdel-Aty M. (2011) A Stochastic Catastrophe Model using Two-Fluid Model Parameters to Investigate Traffic Safety on Urban Arterials, *Accident Analysis & Prevention*, Elsevier, Vol. 43, Issue 3, pp. 1267-1278.

240. Dixit V., Pande A., Abdel-Aty M., Das A. and Radwan E. (2011) Quality of Traffic Flow on Urban Arterial Streets and its Relationship with Safety, *Accident Analysis & Prevention*, Elsevier, Volume 43, Issue 5, September 2011, Pages 1610-1616.

241. Abdel-Aty M. and Gayah V. (2011) Using Traffic Micro-simulation to Test Route Diversion as a Real-Time Crash Prevention Strategy on Freeways, *Advances in Transportation Studies an International Journal*, Vol. XXIII, April 2011, pp. 15-28.

242. Lee C, Park P. and Abdel-Aty M. (2011) Lane-by-lane Analysis of Crash Occurrence Based on Driver's Lane-Changing and Car-Following Behavior, *Journal of Transportation Safety & Security*, Volume 3 Issue 2, pp. 108-122.

243. Wang W., Yan X., Huang H., Chu X. and Abdel-Aty M. (2011) Design and Verification of a Laser Based Device for Pavement Macrotecture Measurement, *Transportation Research C*, Vol 19, pp. 682-694.

244. Abdel-Aty M. and Haleem K. (2011) Analyzing Angle Crashes at Unsignalized Intersections Using Machine Learning Techniques, *Accident Analysis & Prevention*, Elsevier, Volume 43, Issue 1, pp. 461-470.

245. Pande A., Abdel-Aty M. and Das A. (2010) A Classification Tree Based Modeling Approach for Segment Related Crashes on Multilane Highways, *Journal of Safety Research*, Volume 41, Issue 5, pp. 391-397.

246. Almonte A. and Abdel-Aty M. (2010) Exploring the “Level-of-Service & Traffic Safety” Relationship at Signalized Intersections, *ITE Journal*, Volume 80, Issue 6, pp 18-24

247. Harb R., Radwan E., Abdel-Aty M. and Su X. (2011) Two Simplified Intelligent Transportation System-Based Lane Management Strategies for Short Term Work Zones, *Journal of Intelligent Transportation Systems*, Volume 15, Issue 1, pp. 52-61.

248. Li Y., Ye J., Chen X., Abdel-Aty M. and Cen, M. (2010). Transportation Characteristics Change under Rapid Urban Expansion: A Case Study of Shanghai. *Chinese Geographical Science*, 20(6), pp. 554-561.

249. Ma M., Yan X., Abdel-Aty M., Huang H. and Wang, X. (2010). Safety Analysis of Urban Arterials under Mixed-Traffic Patterns in Beijing. *Transportation Research Record*, 2193(1), pp. 105-115.

250. Haleem K. and Abdel-Aty M. (2010) Examining Traffic Crash Injury Severity at Unsignalized Intersections, *Journal of Safety Research*, Volume 41, Issue 4, pp 347-357.

251. Huang H and Abdel-Aty M. (2010) Multilevel Data in Traffic Safety: a Five-level Hierarchical Spatiotemporal Model, *Accident Analysis & Prevention*, Elsevier, Volume 42, Issue 6, pp. 1556-1565.

252. Huang H., Abdel-Aty M. and Darwiche A. (2010) County-level Crash Risk Analysis in Florida: Bayesian Spatial Modeling, *Journal of the Transportation Research Board*, No. 2148, vol.2, pp. 27-37.

253. Haleem K. and Abdel-Aty M. (2010) Multiple Applications of the Multivariate Adaptive Regression Splines Technique in Predicting Rear-end Crashes at Unsignalized Intersections, *Journal of the Transportation Research Board*, No. 2165, pp 33-41.

254. Das A., Abdel-Aty M. and Pande A. (2010) Using Genetic Programming to Investigate the Design Parameters Contributing to Crash occurrence on Urban Arterials, *Journal of the Transportation Research Board*, No. 2147, Vol. 1, pp. 25-32.

255. Ma M., Yan X., Abdel-Aty M., Huang H. and Wang X., (2010) Analysis of Urban Arterial Safety in Developing Countries: Case of China, *Journal of the Transportation Research Board* No. 2193, pp. 105-115.

256. Ma M., Yan X., Huang H. and Abdel-Aty M. (2010) Occupational Driver Safety of Public Transportation: Risk Perception, Attitude, and Driving Behavior, *Journal of the Transportation Research Board*, No. 2145, Vol 3, pp. 72-79.

257. Haleem K., Abdel-Aty M. and Mackie K. (2010) Using a Reliability Process to Reduce Uncertainty in Predicting Crashes at Unsignalized Intersections, *Accident Analysis & Prevention*, Elsevier, Volume 42, Issue 2, pp. 654-666.

258. Das A. and Abdel-Aty M. (2010) A Genetic Programming Approach to Explore the Crash Severity on Multi Lane Roads, *Accident Analysis & Prevention*, Elsevier, Volume 42, Issue 2, Pages 548-557.

259. Abdel-Aty M. and Gayah V. (2010) Real-time Crash Risk Reduction on Freeways Using Coordinated and Uncoordinated Ramp Metering Approaches, *ASCE Journal of Transportation Engineering*, Volume 136, No. 5. pp. 410-423.

260. Guo F., Wang X. and Abdel-Aty M. (2010) Modeling Signalized Intersection Safety with Corridor Level Spatial Correlations, *Accident Analysis & Prevention*, Elsevier, 42(1), 84-92.

261. Abdel-Aty M., Pande A. and Hsia L. (2010) The Concept of Proactive Traffic Management

for Enhancing Freeway Safety and Operation, *ITE Journal*, Volume 80, Issue 4, pp 34-41.

262. Nevarez A., Abdel-Aty M., Wang X. and Santos J. (2009) Multi-Level Analysis of Severe Crashes Along Arterials Including the Effect of Road Entity and Collision Type, *Journal of Transportation Safety & Security*, Vol. 1, No. 3, pp. 203-223.

263. Pande A. and Abdel-Aty M. (2009) A Novel Approach for Analyzing Severe Crash Patterns on Multilane Highways, *Accident Analysis & Prevention*, Elsevier, Vol. 41, pp. 985-994.

264. Das A., Abdel-Aty M. and Pande A. (2009) Using Conditional Inference Forests to Identify the Factors Affecting Crash Severity on Arterial Corridors, *Journal of Safety Research*, Vol. 40, pp. 317-327.

265. Abdel-Aty M., Devarasetty P. and Pande A. (2009) Safety Evaluation of Multilane Arterials in Florida, *Accident Analysis & Prevention*, Elsevier, Vol 41, issue 4, pp. 777-788.

266. Wang X., Abdel-Aty M., Almonte A. and Darwiche A. (2009) Incorporating Traffic Operation Measures in Safety Analysis at Signalized Intersections, *Journal of Transportation Research Board*, No 2103, Vol. 2, pp. 98-107.

267. Pande A. and Abdel-Aty M. (2009) Market Basket Analysis of Crash Data from Large Jurisdictions and its Potential as a Decision Support Tool, *Safety Science*, Elsevier, 47 (1), p.145-154.

268. Abdel-Aty M., Yan X., Radwan E. and Wang X. (2009) Assessing Rear-End Crash Risk at Signalized Intersections Based on the Driving Behavior. *Journal of Transportation Safety & Security*, Volume 1, Issue 2 June 2009, pp. 85-100.

269. Lee C. and Abdel-Aty M. (2009) Analysis of Crashes on Freeway Ramps by Location of Crash and Presence of Advisory Speed Signs, *Journal of Transportation Safety & Security*, Volume 1, Issue 2 June 2009, pp. 121 - 134.

270. Abdel-Aty M., Wang X. and Santos J. (2009) Identifying Intersection Related Traffic Crashes for Accurate Safety Representation, *ITE Journal*, Vol. 79 (12), pp. 38-44.

271. Lee C. and Abdel-Aty M. (2008) Presence of passengers: Does it increase or reduce driver's crash potential? *Accident Analysis & Prevention*, Elsevier, Vol. 40, issue 5, pp 1703-1712.

272. Wang X. and Abdel-Aty M. (2008) Analysis of Left-Turn Crash Injury Severity by Conflicting Pattern Using Partial Proportional Odds Models, *Accident Analysis & Prevention*, Elsevier, Volume 40, issue 5, pp. 1674-1682.

273. Lee C. and Abdel-Aty M. (2008) Two-Level Nested Logit Model to Identify Traffic Flow Parameters Affecting Crash Occurrence on Freeway Ramps, *Journal of the Transportation Research Board* No. 2083, pp.145-152.

274. Pande A. and Abdel-Aty M. (2008) A Computing Approach Using Probabilistic Neural Networks for Instantaneous Appraisal of Rear-End Crash Risk, *Computer-Aided Civil and Infrastructure Engineering*, Vol. 23, issue 7, pp. 549-559.

275. Abdel-Aty M., Pande A., Das A. and Knibbe W. (2008) Assessing Safety on Dutch Freeways with Data from Infrastructure-Based Intelligent Transportation Systems, *Journal of the Transportation Research Board* No. 2083, pp.153-161.

276. Pande A. and Abdel-Aty M. (2008) Discovering Indirect Associations in Crash Data Using Probe Attributes, *Journal of the Transportation Research Board*, No. 2083, pp.170-179.

277. Das A., Pande A., Abdel-Aty M. and Santos J. (2008) Characteristics of Urban Arterial Crashes Relative to Proximity to Intersections and Injury Severity, *Journal of the Transportation Research Board*, No. 2083, pp.137-144.

278. Wang X., Abdel-Aty M., Nevarez A. and Santos J. (2008) Investigation of Safety Influence Area For Four-legged Signalized Intersections: Nationwide Survey and Empirical Inquiry, *Journal of the Transportation Research Board*, No. 2083, pp. 86-95.

279. Lee C. and Abdel-Aty M. (2008) Testing Effects of Warning Messages and Variable Speed Limits on Driver Behavior Using Driving Simulator, *Journal of the Transportation Research Board*, No. 2069, pp. 55-64.

280. Dixit V., Pande A., Radwan E. and Abdel-Aty M. (2008) Understanding the Impact of a Recent Hurricane on Mobilization Time During a Subsequent Hurricane, *Journal of the Transportation Research Board* No. 2041, pp. 49-57.

281. Abdel-Aty M., Cunningham R., Gayah V. and Hsia L. (2008) Dynamic Variable Speed Limit Strategies For Real-time Crash Risk Reduction On Freeways, *Journal of the Transportation Research Board*, No. 2078, pp. 108-116.

282. Harb R., Radwan E., Yan X., Pande A. and Abdel-Aty M. (2008) Freeway Work-Zone Crash Analysis and Risk Identification Using Multiple and Conditional Logistic Regression, *ASCE Journal of Transportation Engineering*, Vol. 134 No. 5, pp 203-214.

283. Wang X. and Abdel-Aty M. (2008), Modeling Left-Turn Crash Occurrence at Signalized Intersections by Conflicting Patterns, *Accident Analysis and Prevention*, Elsevier, Vol 40/1 pp 76-88.

284. Yan X., Abdel-Aty M., Radwan E., Wang X. and Chilakapati P. (2008) Validating a Driving Simulator Using Surrogate Safety Measures, *Accident Analysis and Prevention*, Elsevier, Vol 40/1 pp 274-288.

285. Harb R., Radwan E., Yan X., Abdel-Aty M., and Pande A. (2008) Environment, Drivers, and Vehicles' Risk Analysis for Freeway Work-Zone Crashes, *ITE Journal*, Vol 78(1), pp. 26-30.

286. Abdel-Aty M., Lee C., Bai Y., Li X. and Michalak M. (2007) Detecting periodic patterns of arrival delay, *Journal of Air Transport Management*, Elsevier, 13(6), pp. 355-361.

287. Abdel-Aty M., Chundi S. and Lee C. (2007) Geo-Spatial and Log-linear Analysis of Pedestrian and Bicyclist Crashes Involving School-aged Children, *Journal of Safety Research*, Elsevier, Volume 38, Issue 5, pp. 571-579.

288. Abdel-Aty M. and Pande A. (2007) Crash Data Analysis: Collective vs. Individual crash Level Approach, *Journal of Safety Research*, Elsevier, Volume 38, Issue 5 pp 581-587.

289. Pande A. and Abdel-Aty M. (2007) Multiple-Model Framework for Assessment of Real-Time Crash Risk, *Journal of the Transportation Research Board* No. 2019, pp. 99-107.

290. Wang X. and Abdel-Aty M. (2007) Investigation of Right-Angle Crash Occurrence at Signalized Intersections, *Journal of the Transportation Research Board* No. 2019, pp. 156-168.

291. Abdel-Aty M., Pande A., Lee C., Gayah V. and Dos Santos C. (2007) Crash Risk Assessment using Intelligent Transportation Systems Data and Real-time Intervention Strategies to Improve Safety on Freeways, *ITS Journal*, Vol 11, issue 3, pp. 107-120.

292. Abdel-Aty M., Dhindsa A. and Gayah V. (2007) Considering Various ALINEA Ramp Metering Strategies for Crash Risk Mitigation on Freeways under Congested Regime, *Transportation Research C: Emerging Technologies*, Elsevier, Volume 15, Issue 2, pp.113-134.

293. Harb R., Radwan E., Yan X. and Abdel-Aty M. (2007) Light Truck Vehicles (LTVs) Contribution to Rear End Collisions, *Accident Analysis and Prevention*, Elsevier, Vol 39, issue 5, pp. 1026-1036.

294. Wang X. and Abdel-Aty M. (2006) Temporal and Spatial Analyses of Rear-end Crashes at Signalized Intersections, *Accident Analysis and Prevention*, Elsevier, Volume 38, issue 6, pp. 1137-1150.

295. Abdel-Aty M. and Nawathe P. (2006) A Novel Approach for Signalized Intersection Crash Classification and Prediction, *Advances in Transportation Studies, An International Journal* Vol IX, pp. 67-80.

296. Pande A. and Abdel-Aty M. (2006) Assessment of freeway traffic parameters leading to lane-change related collisions, *Accident Analysis and Prevention*, Elsevier, Volume 38, No. 5, pp 936-948.

297. Abdel-Aty M. and Abdalla F. (2006) Examination of Multiple Mode/Route Choice Paradigms under ATIS, *IEEE Transactions on Intelligent Transportation Systems* Vol. 7, No. 3, pp. 332-348.

298. Pande A. and Abdel-Aty M. (2006) Comprehensive Analysis of the Relationship between Real-time Traffic Surveillance data and Rear-end Crashes on Freeways, *Journal of the Transportation Research Board*, No. 1953, pp. 31-40.

299. Lee C. and Abdel-Aty M. and Hsia L. (2006) Potential Real-Time Indicators of Sideswipe Crashes on Freeways, *Journal of the Transportation Research Board*, No. 1953, pp. 41-49.

300. Abdel-Aty M., Pemmanaboina R. and Hsia L. (2006) Assessing Crash Occurrence on Urban Freeways by Applying a System of Interrelated Equations, *Journal of the Transportation Research Board*, No. 1953, pp. 1-9.

301. Abdel-Aty M., Dilmore J. and Hsia L. (2006) Applying Variable Speed Limits and the Potential for Crash Migration, *Journal of the Transportation Research Board*, No. 1953, pp. 21-30.

302. Wang X., Abdel-Aty M. and Brady P. (2006) Crash Estimation at Signalized Intersections: Significant Factors and Temporal Effect, *Journal of the Transportation Research Board*, No. 1953, pp. 10-20.

303. Abdel-Aty M. and Wang X. (2006) Crash Estimation at Signalized Intersections along Corridors: Analyzing Spatial Effect and Identifying Significant Factors, *Journal of the Transportation Research Board*, No. 1953, pp. 98-111.

304. Abdel-Aty M. and Pande A. (2006) ATMS Implementation System for Identifying Crash Conditions Leading to Potential Crashes, *IEEE Transactions on Intelligent Transportation Systems*, Vol. 7, No. 1, pp. 78-91.

305. Abdel-Aty M., Dilmore J. and Dhindsa A. (2006) Evaluation of Variable Speed Limits for Real-Time Freeway Safety Improvement, *Accident Analysis and Prevention*, Elsevier, Volume 38, issue 2, pp. 335-345.

306. Abdel-Aty M., Salkapuram H., Lee C and Brady P. (2006) A Simplistic Practical Approach to Identify Traffic Crash Profiles at Signalized Intersections, *ITE Journal*, Vol. 76 No. 4, pp 28-33.

307. Abdel-Aty M. and Pemmanaboina R. (2006) Calibrating a Real-Time Traffic Accident Prediction Model Using Archived Weather and ITS Traffic Data, *IEEE Transactions on Intelligent Transportation Systems*, Vol. 7, No. 2.

308. Keller J., Abdel-Aty M. and Brady P. (2006) Type of Collision Analysis and Data Evaluation at Signalized Intersections, *ITE Journal*, Vol. 76 No. 2, pp 30-39.

309. Abdel-Aty M. (2005) Using Generalized Estimating Equations to Account for Correlation in Route Choice Models, *Journal of Transportation and Statistics*, Vol. 8, No. 1, pp.85-101.

310. Pande A. and Abdel-Aty M. (2005) A Freeway Safety Strategy for Advanced Proactive Traffic Management, *Journal of Intelligent Transportation Systems*, Vol. 9 Issue 3, pp. 145-158.

311. Yan X., Radwan E. and Abdel-Aty M. (2005) Characteristics of Rear-end Accidents at Signalized Intersections Using Multiple Logistic Regression Model, *Accident Analysis and Prevention*, Elsevier, Volume 37, issue 6, pp. 983-995.

312. Lee C. and Abdel-Aty M. (2005) Comprehensive Analysis of Vehicle-Pedestrian Crashes at Intersections in Florida, *Accident Analysis & Prevention*, Elsevier, Vol 37, No. 4, pp. 775-786.

313. Abdalla F. and Abdel-Aty M. (2006) Modeling Travel Time Under ATIS using Mixed Linear Models, *Transportation*, Volume 33 No 1, pp. 63 – 82.

314. Abdel-Aty M., Keller J. and Brady P. (2005) Analysis of the Types of Crashes at Signalized Intersections using Complete Crash Data and Tree-Based Regression, *Journal of the Transportation Research Board*, No. 1908, pp. 37-45.

315. Pande A., Abdel-Aty M. and Hsia L. (2005) Spatio-Temporal Variation of Risk Preceding Crash Occurrence on Freeways, *Journal of the Transportation Research Board*, No. 1908, pp.26-36.

316. Abdel-Aty M., Uddin N. and Pande A. (2005) Split Models for Predicting Multi-Vehicle Crashes during High-Speed and Low-Speed Operating Conditions on Freeways, *Journal of the Transportation Research Board*, No. 1908, pp.51-58.

317. Yu J. and Abdel-Aty M. (2005) A Combined Approach to Determine the Location and Time of Freeway Crashes using Loop Detectors, *Journal of Infrastructure Planning and Management*, Japan Society of Civil Engineers, No. 786, pp. 157-166.

318. Abdel-Aty M. and Keller J. (2005) Exploring the Overall and Specific Crash Severity Levels at Signalized Intersections, *Accident Analysis and Prevention*, Elsevier, Vol. 37, Issue 3, pp. 417-425.

319. Abdel-Aty M. and Pande A. (2005) Identifying crash propensity using specific traffic speed conditions, *Journal of Safety Research*, Elsevier, Vol. 36 No.1, pp. 97-108.

320. Abdel-Aty M. and Pemmanaboina R. (2005) Assessing Crash Occurrence on Urban Freeways Using Static and Dynamic Factors, *Advances in Transportation Studies, An International Journal*, Vol 5, pp. 39-51.

321. Abdel-Aty M., Pande A., Hsia L. and Abdalla F. (2005) The Potential for Real-Time Traffic Crash Prediction, *ITE Journal*, Vol. 75 No. 12, pp 69-75.

322. Abdel-Aty M. and Abdalla F. (2004) Understanding Drivers' Route Choice Under Long-Term Pre-Trip and Short-Term En-Route Traffic Information Using Generalized Estimating Equations, *ASCE Journal of Transportation Engineering*, Vol. 130, No. 6, pp. 777-786.

323. Abdel-Aty M. and Abdalla F. (2004) Modeling Drivers' Diversion from Normal Routes Under ATIS Using Generalized Estimating Equations and Binomial Probit Link Function, *Transportation*, Vol 31 No 3, pp 327-348.

324. Abdel-Aty M., Uddin N., Pande A., Abdalla F. and Hsia L. (2004). Predicting Freeway Crashes Based on Loop Detector Data Using Matched Case-Control Logistic Regression, *Journal of the Transportation Research Board*, No. 1897, pp. 88-95.

325. Abdel-Aty M. and Abdalla F. (2004) Modeling Repeated Multinomial Route Choices Under ATIS Using Generalized Estimating Equations with Polytomous Logit Function, *Journal of the Transportation Research Board*, No. 1882, pp. 61-69.

326. Abdel-Aty M. and Abdalla F. (2004) Linking Roadway Geometrics and Real-Time Traffic Characteristics to Model Daytime Freeway Crashes Using Generalized Extreme Equations for Correlated Data, *Journal of the Transportation Research Board*, No. 1897, pp. 106-115.

327. Abdel-Aty M. and Abdelwahab H. (2004) Analysis and Prediction of Traffic Fatalities Resulting from Angle Collisions Including the Effect of Vehicles' Configuration and Compatibility, *Accident Analysis and Prevention*, Elsevier, Volume 36, Issue 3, pp 457-469.

328. Abdel-Aty M. and Abdelwahab H. (2004) Predicting Injury Severity Levels in Traffic Crashes: A Modeling Comparison, *ASCE Journal of Transportation Engineering*, Vol 130, No.2.

329. Abdel-Aty M. and Huang Y. (2004) An Exploratory Spatial Analysis of Expressway Ramps and its Effect on Route Choice, *Journal of Transportation Engineering, ASCE*, Vol 130, No. 1.

330. Abdel-Aty M. and Abdelwahab H. (2004) Modeling Rear-End Collisions Including the Role of Drivers Visibility and Light Truck Vehicles Using a Nested Logit Structure, *Accident Analysis and Prevention*, Elsevier, Volume 36, Issue 3, pp 447-456.

331. Abdelwahab H. and Abdel-Aty M. (2004) Investigating the effect of LTV percentages on Rear-End fatal crashes (Part I), *ASCE Journal of Transportation Engineering*, Vol.130, No. 4.

332. Abdelwahab H. and Abdel-Aty M. (2004) Investigating the effect of LTV percentages on head-on fatal traffic crashes (Part II), *ASCE Journal of Transportation Engineering*, Vol. 130, No. 4.

333. Abdel-Aty M. (2003) Analysis of Driver Injury Severity Levels at Multiple Locations Using Ordered Probit Models, *Journal of Safety Research*, Elsevier, Vol 34, No. 5, pp. 597-603.

334. Abdel-Aty M. (2003) Investigating the Relationship between Cellular Phone Use and Traffic Safety, *ITE Journal*, Vol 73, No. 10, pp 38-42.

335. Abdel-Aty M. and Abdelwahab H. (2003) Configuration Analysis of Two-Vehicle Rear-End Crashes, *Journal of the Transportation Research Board* No. 1840, pp. 140-147.

336. Abdel-Aty M. (2003) Hybrid Distribution and Response Techniques for an O-D Travel Survey, *ITE Journal*, Vol 72, No. 2, pp 22-27.

337. Abdelwahab H. and Abdel-Aty M. (2002). Investigating Driver Injury Severity in Traffic Accidents Using Fuzzy ARTMAP, *Journal of Computer-Aided Civil and Infrastructure Engineering* **17**, pp. 396-408.

338. Abdelwahab H. and Abdel-Aty M. (2002). Traffic Safety Analysis for Toll Plazas using Artificial Neural Networks and Logit Models, *Journal of the Transportation Research Board*, Vol **1784**, pp. 115-125.

339. Abdelwahab H. and Abdel-Aty M. (2002). Investigating the Travel and User Characteristics of Toll Roads Based on a Travel Survey of the Central Florida Expressway System, *Journal of the Transportation Research Board*, Vol. **1807**, pp. 43-50.

340. Abdel-Aty, M. and Abdelwahab H. (2001). Toll Road Origin-Destination Travel Survey: Internet and Mail-back Response Analysis and the Implications for Future Surveys, *Journal of the Transportation Research Board*, Vol. **1768**, pp 61-70.

341. Abdelwahab H. and Abdel-Aty M. (2001). Development of Artificial Neural Networks Models to Predict Driver Injury Severity in Traffic Accidents at Signalized Intersections, *Journal of the Transportation Research Board*, Vol. **1746**, pp. 6-13.

342. Abdel-Aty, M. (2001). Using Ordered Probit Modeling to Study the Effect of ATIS on Transit Ridership, *Transportation Research C*, Elsevier, **Vol. 9, No. 4**, pp 265-277.

343. Mohamed A., Abdel-Aty, M. and Kłodzinski J. (2001). Safety Considerations in Designing Electronic Toll Plazas: Case Study, *ITE Journal*, Vol. 71, No. 3, pp 20-24.

344. Abdel-Aty M., Abdelwahab H., Aiouche H. and Huang Y. (2000) The Design and Administration of an Origin/Destination Survey for the Central Florida Expressway System, *Al-Azhar University Engineering Journal* (Special Issue), Vol. 4, pp. 597-606.

345. Abdelwahab H. and Abdel-Aty M. (2000) Applying MLP Neural Networks to Predict Driver's Injury Severity in Traffic Accidents, *Al-Azhar University Engineering Journal* (Special Issue), Vol. 4, pp.607-615.

346. Abdel-Aty M. and Radwan E. (2000). Modeling Traffic Accident Occurrence and Involvement, *Accident Analysis & Prevention Journal*, Elsevier, **Vol. 32, No. 5**, pp. 21-30.

347. Abdel-Aty M. and Abdelwahab H. (2000). Exploring the Relationship between Alcohol and the Driver Characteristics in Motor Vehicle Accidents, *Accident Analysis & Prevention Journal*, **Vol. 32, No. 4**, pp. 473-482.

348. Abdel-Aty M. (1999). A Simplified Approach for Developing a Multi-Modal Travel Planner, *ITS Journal*, **Vol. 5 No. 3**.

349. Abdel-Aty M. (1999). Modeling Senior Travelers' Acceptance of New Transit Systems, *Journal of Public Transportation* **Vol. 2, No. 3**.

350. Abdel-Aty M., Chen C. and Radwan E. (1999). Using Conditional Probability to find the Driver Age Effect in Crashes, *Journal of Transportation Engineering, ASCE*, **Vol. 125, No. 6**.

351. Abdel-Aty M., Chen C., Radwan E. and Brady P. (1999). Analysis of Crash-Involvement Trends by Drivers Age in Florida, *ITE Journal*, **69** (2), pp. 69-74.

352. Vaughn K., Abdel-Aty M. and Kitamura R. (1999). A Framework for Developing a Daily Activity and Multimodal Travel Planner, *International Transactions in Operations Research*, **Vol. 6 (1)**, pp. 107-121.

353. Abdel-Aty M., Chen C. and Schott J. (1998). An Assessment of the Effect of Driver Age on Traffic Accident Involvement Using Log-Linear Models, *Accident Analysis & Prevention Journal*, Elsevier, **Vol. 30, No. 6**, pp. 851-861.

354. Abdel-Aty M. (1998). Modeling Incident-Related Routing Decisions by Using a Nested Logit Structure, *Transportation Research Record* **1645**, *Journal of the Transportation Research Board*, pp. 103-110.

355. Abdel-Aty M., Kitamura R. and Jovanis P. (1997) Using Stated Preference Data for Studying the Effect of Advanced Traffic Information on Drivers' Route Choice, *Transportation Research*, Elsevier, **Vol. 5C, No. 1**.

356. Abdel-Aty M., Jovanis P. and Kitamura R. (1996) The Impact of Advanced Transit Information on Commuters' Mode Changing, *ITS Journal*, **Vol. 3(2)**.

357. Abdel-Aty M., Kitamura R. and Jovanis P. (1996) Investigating the Effect of Advanced Traveler Information on Commuters' Tendency to Use Transit, *Transportation Research Record* **1550**, *Journal of the Transportation Research Board*, pp. 65-72.

358. Abdel-Aty M., Kitamura R. and Jovanis P. (1995). Investigating the Effect of Travel Time Variability on Route Choice Using Repeated-measurement Stated Preference Data, *Transportation Research Record* **1493**, *Journal of the Transportation Research Board*, pp 39-45.

359. Abdel-Aty M., Kitamura R. and Jovanis P. (1995). Exploring Route Choice Behavior

Using GIS-based Alternative Routes and Hypothetical Travel Time Information Input, *Transportation Research Record 1493, Journal of the Transportation Research Board*, pp. 74-80.

360. Abdel-Aty M., Kitamura R., Jovanis P., Reddy P. and Vaughn K. (1995) A New Approach To Route Choice Data Collection: Multi-phase, CATI Panel Surveys Using A Geographic Information Systems Database, *Transportation Research Record 1493, Journal of the Transportation Research Board*, pp. 159-169.

361. Abdel-Aty M. and Jovanis P. (1995) The Effect of ITS on Transit Ridership. *ITS Quarterly*, Vol 3 Issue: 2, pp. 21-25.

362. Vaughn K., Reddy P., Abdel-Aty M., Kitamura R. & Jovanis P. (1995). Route Choice and Information Use: Initial Results from Simulation Experiments, *Transportation Research Record 1516, Journal of the Transportation Research Board*.

363. Reddy P., Yang H., Vaughn K., Abdel-Aty M., Kitamura R. & Jovanis P. (1995). Design of an Artificial Simulator for Analyzing Route Choice Behavior in the Presence of Information System, in *Journal of Mathematical and Computer Modeling*, Vol. 22, No. 4-7, pp. 119-147.

364. Abdel-Aty M., Vaughn K., Kitamura R., Jovanis P. & Mannering F. (1994). Models of Commuters' Information Use and Route Choice: Initial results Based on a Southern California Commuter Route Choice Survey, *Transportation Research Record 1453, Journal of the Transportation Research Board*.

365. Yang H., Kitamura R., Jovanis P., Vaughn K. & Abdel-Aty M. (1993). Exploration of Route Choice Behavior with Advanced Traveler Information using Neural Network Concepts", *Transportation*, Vol. 20, pp. 199-223.

366. Vaughn K., Abdel-Aty M., Kitamura R., Jovanis P. & Yang H. (1993). Experimental Analysis and Modeling of Sequential Route Choice Behavior under ATIS in a Simplistic Traffic Network", *Transportation Research Record 1408, Journal of the Transportation Research Board*, pp. 75-82.

367. Salem M., Hassan A. & Aty M. (1991). Optimizing the Running Performance Over Railway Tracks Using Simulation Technique, *Alexandria Engineering Journal*, Vol. 30, No. 4, pp. C241-C254.

REFEREED CONFERENCE AND OTHER REFEREED PUBLICATIONS

368. Yue L., Abdel-Aty M., Wu Y., Zheng O. (2022) Investigating the Effects of P2V Human-Machine Interface Design Using Driving Simulator Experiment, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-04916, Washington DC, January 2022.

369. Li P., Abdel-Aty M. (2022) Real-time Secondary Crash Likelihood Prediction Using A Hybrid Machine Learning Model, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-01375, Washington DC, January 2022.

370. Li P., Abdel-Aty M. (2022) Improving Spatio-temporal Transferability of Real-Time Crash Likelihood Prediction Models Using Transfer Learning Approaches, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-01252, Washington DC, January 2022.

371. Ou Zheng., Cai Q., Abdel-Aty M., Wu Y. (2022) Using virtual simulator to evaluate the automated emergency braking system for avoiding pedestrian crashes at intersections under occlusion conditions, 101st Annual Meeting of the *Transportation Research Board*,

TRBAM-22-04708, Washington DC, January 2022.

372. Islam Z., Abdel-Aty M., Cai Q., Yuan J. (2022) Crash Data Augmentation Using Variational Autoencoder, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-02958, Washington DC, January 2022.

373. Zhang S., Abdel-Aty M. (2022) Driver's Visual Distraction Detection Using Facial Landmarks and Head Pose, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-00385, Washington DC, January 2022.

374. Goswamy A., Abdel-Aty M., Mahmoud N., Cai Q. (2022) Safety Effectiveness of Rectangular Rapid Flashing Beacons (RRFB), 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-04393, Washington DC, January 2022.

375. Hasan T., Abdel-Aty M., Mahmoud N. (2022) Development of Short-term Safety Performance Functions (SPFs) for Freeway Sections with Variable Speed Limit (VSL)/Variable Advisory Speed (VAS), 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-02314, Washington DC, January 2022.

376. Rim H., Abdel-Aty M., Mahmoud N., Yuan J. (2022) Developing Safety Performance Function at Different Aggregation Levels for Freeway with High Occupancy Toll Lanes, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-02306, Washington DC, January 2022.

377. Fu J., Abdel-Aty M., Mahmoud N., Wu Y. (2022) Short-Term Safety Performance Functions for Freeways Including HOV Lanes, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-01138, Washington DC, January 2022.

378. Ugan J., Abdel-Aty M., Cai Q. (2022) Estimating effectiveness of speed reduction measures for pedestrian crossing treatments using an empirically supported speed choice modeling framework, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-01102, Washington DC, January 2022.

379. Wang Z., Yue L., Abdel-Aty M., Zhu J., Zheng O., Zaki M. (2022) Cooperative Driving at Non-Signalized Intersection in a Mixed Traffic Environment: A Co-Simulation Based Multi-Driver Driving Simulator Study, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-04318, Washington DC, January 2022.

380. Anisha A., Abdel-Aty M., Abdelraouf A., Wu Y., Islam Z., Zheng O. (2022) Automated Vehicle to Vehicle Conflict Analysis at Signalized Intersections by Camera and LiDAR Sensor Fusion, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-03060, Washington DC, January 2022.

381. Wu Y., Abdel-Aty M., Cai Q. (2022) Developing a Concatenated and Interpretable Deep Learning Model to Predict Single-Vehicle Crash Severity Based on Google Street View Images, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-02853, Washington DC, January 2022.

382. Ma W., Hao Z., Wang L., Abdel-Aty M., Jiang L. (2022) MAGIC Dataset: Multiple Conditions UAV Group-based High-fidelity Comprehensive Vehicle Trajectory Dataset, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-04663, Washington DC, January 2022.

383. Wang L., Zou L., Ma W., Abdel-Aty M. (2022) Expressway Rear-end Conflict Evolution Mechanism Analysis under Different Traffic States, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-04592, Washington DC, January 2022.

384. Abdelraouf A., Abdel-Aty M., Wu Y. (2022) Using Vision Transformers for Spatial-

Context-Aware Rain and Road Surface Condition Detection on Freeways, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-03475, Washington DC, January 2022.

385. Abdelraouf A., Abdel-Aty M., Wu Y. (2022) Real-Time Video-Based Traffic Incident Identification using Roadside CCTV Cameras, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-01962, Washington DC, January 2022.

386. Islam Z., Abdel-Aty M., Wu Y. (2022) Real-time Emergency Vehicle Event Detection Using Audio Data, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-00783, Washington DC, January 2022.

387. Mahmoud N., Abdel-Aty M., Cai Q. (2022) Analyzing the Difference Between Operating Speed and Target Speed Using Mixed-Effect Ordered Logit Model, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-2362, Washington DC, January 2022.

388. Mahmoud N., Abdel-Aty M., Cai Q., Zheng O. (2022) An Integrated Approach to Identify Pedestrian and Bike Crash Hotspots Considering the Context Classification for Multi-lane Arterials, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-03376, Washington DC, January 2022.

389. Baig F., Lee J., Mao S., Abdel-Aty M. (2022) Exploring Decisions to Use Autonomous Vehicles Considering the Roles of the Perceived Safety Risk, Trust, and Self-Efficacy, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-00975, Washington DC, January 2022.

390. Guo Z., Afifah F., Abdel-Aty M. (2022) Impacts of I2V Infrastructure Placement on CVs Safety in an Interconnected Network, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-04116, Washington DC, January 2022.

391. Al-Omari M., Abdel-Aty M. (2022) Evaluation of Driving Behavior and Traffic Safety at Shifting Movements Intersection, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-03243, Washington DC, January 2022.

392. Lee J., Xiao G., Jiang Q., Huang H., Abdel-Aty M., Wang L. (2022) Safety Improvements in the Era of Intelligent Connected Vehicles Considering Market Penetration Rate, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-00344, Washington DC, January 2022.

393. Park J., Son S., Lee G., Abdel-Aty M. (2022) Development of New Performance Measures based on Data Mining Weights for Hotspot Identification, 101st Annual Meeting of the *Transportation Research Board*, TRBAM-22-00933, Washington DC, January 2022.

394. Yuan J., Abdel-Aty M., Fu J., Wu Y., Yue L., Eluru N. (2021) Developing Short-Term Safety Performance Functions for Freeways at Different Aggregation Levels by Using Multi-State Microscopic Traffic Detector Data, 100th Annual Meeting of the *Transportation Research Board*, TRB No. 21-03284, Washington DC, January 2021.

395. Cai Q., Abdel-Aty M., Ugan J., Mahmoud N., Al-Omari M., Young B. (2021) Effects of Various Speed Management Countermeasures on Bicycle Crashes for Urban Roads in Central Florida, 100th Annual Meeting of the *Transportation Research Board*, TRB No. 21-03023, Washington DC, January 2021.

396. Li P., Abdel-Aty M. (2021) Using Bus Driving Events as Surrogate Safety Measures for Pedestrian and Bicycle Based on GPS Trajectory Data, 100th Annual Meeting of the *Transportation Research Board*, TRB No. 21-01722, Washington DC, January 2021.

397. Li P., Abdel-Aty M. (2021) Trajectory Fusion-based Real-Time Crash Likelihood Prediction Using LSTM-CNN with Attention Mechanism, 100th Annual Meeting of the

Transportation Research Board, TRB No. 21-01697, Washington DC, January 2021.

398. Park J., Kim H., Kwon K., Park N., Abdel-Aty M. (2021) Exploration and evaluation of crash-and simulation-based safety performance of freeway facilities, 100th Annual Meeting of the *Transportation Research Board*, TRB No. 21-01202, Washington DC, January 2021.

399. Cai Q., Abdel-Aty., Mahmoud N., Al-Omari M., Yuan C., Young B. (2021) Exploring Effects of Speed Management Strategies on Drivers' Speeding Behavior on Urban and Suburban Arterials with Probe Speed Data, 100th Annual Meeting of the *Transportation Research Board*, TRB No. 21-02861, Washington DC, January 2021.

400. Rahman H., Abdel-Aty M., Zaki M. (2021) Evaluation of the Impact of Communication System on Traffic Safety Under Connected and Automated Vehicles Environment, 100th Annual Meeting of the *Transportation Research Board*, TRB No. 21-02905, Washington DC, January 2021.

401. Mahmoud N., Abdel-Aty M., Cai Q. (2021) Factors Contributing to Operating Speed on Different Context Classifications of Arterial Segments in Central Florida, TRB No. 21-03294, Washington DC, January 2021.

402. Yue L., Abdel-Aty M., Wu Y., Morris M. (2021) Influence of Pedestrian-to-Vehicle Technology on Driver Response and Safety Benefits Considering Pre-Crash Scenario Heterogeneity, 100th Annual Meeting of the *Transportation Research Board*, TRB No. 21-01000, Washington DC, January 2021.

403. Yue L., Abdel-Aty M., Wu Y., Ugan J., Yuan C. (2021) Effects of Forward Collision Warning Technology in Different Pre-Crash Scenarios, Detection, 100th Annual Meeting of the *Transportation Research Board*, TRB No. 21- 00898, Washington DC, January 2021.

404. Lee J., Abdel-Aty M. (2021) Changes in Traffic Crash Patterns: Before and After the Outbreak of COVID-19 in Southern Florida, TRB No. 21- 02025, Washington DC, January 2021.

405. Li P., Abdel-Aty M., Islam Z. (2021) Driving Behavior Detection Using Semi-supervised LSTM and Smartphone Sensors, 100th Annual Meeting of the *Transportation Research Board*, TRB No. 21-02836, Washington DC, January 2021.

406. Wu Y., Abdel-Aty M., Zhang O., Yuan J. (2021) Road Safety Diagnostics using Roadside Video Data Based on Car Pose Detection, 100th Annual Meeting of the *Transportation Research Board*, TRB No. 21-00964, Washington DC, January 2021.

407. Zhang S., Abdel-Aty M., Wu Y., Zheng O. (2021) Prediction of Pedestrians' Red-light Crossing Intentions Based on Pose Estimation, 100th Annual Meeting of the *Transportation Research Board*, TRB No. 21-03041, Washington DC, January 2021.

408. Islam Z., Abdel-Aty M. (2021) Sensor-based Transportation Mode Recognition Using Variational Autoencoder: Application of Smart Phone Data in the Context of P2V, 100th Annual Meeting of the *Transportation Research Board*, TRB No. 21-00401, Washington DC, January 2021.

409. Mahmoud N., Abdel-Aty M., Cai Q., Yuan Q. (2021) Predicting Cycle-Level Traffic Movements at Signalized Intersections Using Machine Learning Models, 100th Annual Meeting of the *Transportation Research Board*, TRB No. 21-00283, Washington DC, January 2021.

410. Rahman H., Abdel-Aty, Wu Y. (2021) Comparing the Benefits of Connected and Automated Vehicles to Only Automated Vehicles by Considering a Multi-Vehicle Communication System, 100th Annual Meeting of the *Transportation Research Board*, TRB No. 21-02902, Washington DC, January 2021.

411. Al-Omari. M., Abdel-Aty M. (2021) Evaluation of a New Intersection Design “Shifting Movements”, 100th Annual Meeting of the *Transportation Research Board*, TRB No. 21-00246, Washington DC, January 2021.

412. Abdelrahman A., Abdel-Aty M., Yuan J., Al-Omari M. (2021) Systematic Safety Evaluation of Diverging Diamond Interchanges Based on Nationwide Implementation Data, 100th Annual Meeting of the *Transportation Research Board*, TRB No. 21-00026, Washington DC, January 2021.

413. Abdelraouf A., Abdel-Aty M., Yuan J. (2021) Predicting Freeway Traffic Speed using Attention-Based Multi-Encoder-Decoder Neural Networks, 100th Annual Meeting of the *Transportation Research Board*, TRB No. 21-03753, Washington DC, January 2021.

414. Cai Q., Abdel-Aty M., Yuan JH, Lee JY., Wu Y. (2020) Applying a Deep Learning Method to Balance Data for Real-Time Crash Prediction on Expressways, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-02940, Washington DC, January 2020.

415. Yuan JH., Abdel-Aty M., Yue L., Gong YB. (2020) Corridor-Level Real-Time Crash Risk Prediction Using Spatial-Temporal LSTM, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-03166, Washington DC, January 2020.

416. Wu Y., Abdel-Aty M., Zeng O., Cai Q. and Zhang S. (2020) Automated Safety Diagnosis Based on Unmanned Aerial Vehicles Videos and Deep Learning Algorithm Transportation Research Board, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-03570, Washington DC, January 2020.

417. Rahman MH., and Abdel-Aty M. (2020) Application of Connected and Automated Vehicles in a Large Scale Network by Considering V2V and V2I Technology, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-03349, Washington DC, January 2020.

418. Yue L., Abdel-Aty M., Wu Y., Zheng O. (2020) In-Depth Approach for Identifying Crash Causation Patterns and its Implications for the Development of Active Pedestrian Safety Systems, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-01440, Washington DC, January 2020.

419. Yue L., Abdel-Aty M., Wu Y., Yuan JH. (2020) An Augmentation Function for Active Pedestrian Safety System Based on Crash Risk Evaluation, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-01021, Washington DC, January 2020.

420. Gu X., Abdel-Aty M., Lee JY., Xiang Q. (2020) Investigation of Contributing Factors to Drivers’ Risk of Crash Involvement at Interchanges Using Quasi-Induced Exposure and Logistic Regression Approach, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-00144, Washington DC, January 2020.

421. Yuan JH., Abdel-Aty M., Yue L., Cai Q. (2020) Cycle-by-Cycle Crash Risk Analysis at Signalized Intersections by Considering Shockwave Characteristics, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-01626, Washington DC, January 2020.

422. Rahman MS., Abdel-Aty M., Wu Y. (2020) Traffic Safety and Operational Benefits of Connected and Automated Vehicle on Expressways: Application of Real-World Validated CAV Data, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-00261, Washington DC, January 2020.

423. Rahman MS., Abdel-Aty M. (2020) Traffic Safety Impacts of Dedicated Lanes for Connected Vehicle Platooning on Expressways, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-01094, Washington DC, January 2020.

424. Lee JY, Zhai X., Abdel-Aty M. Huang H. (2020) Macroscopic Analysis of Violations and Crashes Involving Driving Under the Influence of Alcohol or Drugs, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-02737, Washington DC, January 2020.

425. Lee JY, Abdel-Aty M. and Mao S. (2020) Bivariate Ordered Modeling of the Injury Severity Levels of Drivers and School-Age Child Passengers in Traffic Crashes, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-03523, Washington DC, January 2020.

426. Lee JY., Abdel-Aty M., Zhai X., Huang H. (2020) Hierarchical Analysis of Traffic Violations and Crashes: A Macroscopic Safety Analysis, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-01355, Washington DC, January 2020.

427. Lee JY, Abdel-Aty M., Cai Q. (2020) Investigation of Safety-in-numbers for Pedestrians and Bicyclists at a Macroscopic Level with Various Exposure Variables, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-03549, Washington DC, January 2020.

428. Wang L., Zhong H., Abdel-Aty M., Ma W., Park JY. (2020) Safety Benefit Analysis of Connected and Automated Vehicle Technologies Based on Meta-analysis, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-00285, Washington DC, January 2020.

429. Park JY., Abdel-Aty M., Wang L., Lee G., Hong J. (2020) Investigation of Associations between Multiple Freeway Roadway Characteristics and Freight Safety Performance, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-00618, Washington DC, January 2020.

430. Abdelrahman A., Abdel-Aty M., Lee JY., Yue L., Al-Omari M. (2020) Safety Analysis of Displaced Left-Turn Intersections, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-03379, Washington DC, January 2020.

431. Islam Z, Abdel-Aty M., Chowdhury D, Cai Q. (2020) Using Smartphone Sensors to Estimate Vehicle Trajectories and Detect Lane Changes in the Context of Connected Vehicles, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-00437, Washington DC, January 2020.

432. Gong Y., Abdel-Aty M., Yuan JH., Cai Q. (2020) Safety-Orientated Adaptive Traffic Signal Using Multi-Objective Deep Reinforcement Learning, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-01096, Washington DC, January 2020.

433. Saad M., Abdel-Aty M., Wu Y., Rahman MS. (2020) Safety and Operational Impact of Connected Vehicles' Lane Configuration Design on Freeway Facilities with Managed Toll Lanes, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-05543, Washington DC, January 2020.

434. Li P., Abdel-Aty M., Cai Q., Islam Z. (2020) Real-time Vehicle Maneuvers Detection based on Smartphone Sensors and Deep Learning, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-01654, Washington DC, January 2020.

435. Al-Omari, Abdel-Aty M., Lee JY., Yue L. (2020) Safety Evaluation of Median U-Turn Crossover-Based Intersections, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-01603, Washington DC, January 2020.

436. Yasmin S., Iraganaboina N., Bhowmik T., Eluru N., Abdel-Aty M. (2020) Evaluating the Influence of Information Provision on Route Choice Preferences of Road Users:

Application of a Regret Minimization Approach, 99th Annual Meeting of the *Transportation Research Board*, TRB No. 20-00589, Washington DC, January 2020.

437. Yuan JH and Abdel-Aty M. (2019) Cycle-by-Cycle Crash Risk Prediction at Signalized Intersections by Using LSTM, ITS World Congress, Singapore, October 2019.

438. Lee JY and Abdel-Aty M. (2019) Hierarchical Analysis of Speeding Behaviors, Violations, and Crashes Using Real-Time Speed Data from the National Performance Management Research Data Set in the United States, ITS World Congress, Singapore, October 2019.

439. Saad M., Abdel-Aty M., Wu Y. and Rahman S. (2019) Safety Analysis of Managed Toll Lanes Considering Connected Vehicles, Road Safety & Simulation conference, Iowa, October 2019

440. Morris M., Abdel-Aty M., Wu Y. and Yue L. (2019) Evaluating the Effectiveness of P2V Connected Vehicle Technologies in a Driving Simulator, Road Safety & Simulation conference, Iowa, October 2019.

441. Abdel-Aty M., Yue L. and Wu Y. (2019) The Crash Avoidance Effectiveness of Advanced Driver Assistance Systems in Real-World Environment, International Conference on Transportation and Development, ASCE, June 9-12, 2019, Alexandria, VA.

442. Abdel-Aty M., Saad M. and Wu Y. (2019) Safety Analysis of Managed Toll Lanes Considering Connected Vehicles, International Conference on Transportation and Development, ASCE, June 9-12, 2019, Alexandria, VA.

443. Abdel-Aty M. and Lee JY. (2019) Bivariate Ordered Modeling of Crash Injury Severity Level of Drivers and School-Age Passengers, International Conference on Transportation and Development, ASCE, June 9-12, 2019, Alexandria, VA.

444. Lee JY, Abdel-Aty M., and Chung WB, "Pedestrian safety in Florida: a comparative analysis of residents and visitors." 1st International Conference on Smart Tourism, Smart Cities and Enabling Technologies, May 1-4, 2019, Orlando

445. Yue L., Abdel-Aty M., Lee JY. and Wu Y. Safety Benefits of Advanced Driver Assistant Systems and Intelligent Transportation Systems in Future Smart City. 1st International Conference on Smart Tourism, Smart Cities and Enabling Technologies, May 2019, Orlando.

446. Yuan J and Abdel-Aty M. Arterial-Level Real-Time Crash Risk Prediction Using Deep Learning. 1st International Conference on Smart Tourism, Smart Cities and Enabling Technologies, May 2019, Orlando.

447. Yue L., Abdel-Aty M. and Wu Y (2019) The Practical Effectiveness of Advanced Driver Assistance Systems at Different Roadway Facilities: System Limitation, Adoption and Usage, 98th Annual Meeting of the *Transportation Research Board*, TRB No. 19-01119, Washington DC, January 2019.

448. Lee JY, Abdel-Aty M. and El-Urfali A. (2019) The Safety Implications of the Conversion of Continuous Green T-Intersections back to Conventional T-Intersections, 98th Annual Meeting of the *Transportation Research Board*, TRB No. 19-00233, Washington DC, January 2019.

449. Lee JY and Abdel-Aty M. (2019) Safety Effects of Pavement Roughness for Freeways: A Comparative Analysis of Interstate Highways in Five States, 98th Annual Meeting of the *Transportation Research Board*, TRB No. 19-00735, Washington DC, January 2019.

450. Lee JY, Abdel-Aty M., De Blasis M., Wang XS and Mattei I. (2019) International Transferability of Macro-Level Safety Performance Functions: A Case Study of the United

States and Italy, 98th Annual Meeting of the *Transportation Research Board*, TRB No. 19-02530, Washington DC, January 2019.

451. Wang XS, Feng M., Lee JY and Abdel-Aty M. (2019) Transferability of Safety Performance Functions and Hotspot Identification for Freeways of the United States and China, 98th Annual Meeting of the *Transportation Research Board*, TRB No. 19-04898, Washington DC, January 2019.

452. Lee JY, Abdel-Aty M., Xu P. and Gong YB. (2019) Is the Safety-in-Numbers Effect still Observed in Areas with Low Pedestrian Activities?: A Case Study from Central Florida, 98th Annual Meeting of the *Transportation Research Board*, TRB No. 19-00133, Washington DC, January 2019.

453. Cai Q., Abdel-Aty M., Sun Y, Lee JY and Yuan JH. (2019) Applying Deep Learning and High-Resolution Data to Predict Crashes for Transportation Safety Planning, 98th Annual Meeting of the *Transportation Research Board*, TRB No. 19-02685, Washington DC, January 2019.

454. Wu Y., Abdel-Aty M., Wang L. and Rahman S. (2019) Improving flow and safety in low visibility conditions by applying connected vehicles and variable speed limits technologies, 98th Annual Meeting of the *Transportation Research Board*, TRB No. 19-02734, Washington DC, January 2019.

455. Yuan JH., Abdel-Aty M., Cai Q. and Lee JY. (2019) A Driving Simulator Study to Investigate Drivers' Lane Change Behavior on the Weaving Section of a Freeway with Managed Lane, 98th Annual Meeting of the *Transportation Research Board*, TRB No. 19-01319, Washington DC, January 2019.

456. Rahman S., Abdel-Aty M., Lee JY and Rahman H. (2019) Understanding the Safety Benefits of Connected and Automated Vehicles on Arterials' Intersections and Segments, 98th Annual Meeting of the *Transportation Research Board*, TRB No. 19-00869, Washington DC, January 2019.

457. Rahman S., Abdel-Aty M., Hasan S. and Cai Q. (2019) Applying Data Mining Techniques to Analyze the Pedestrian and Bicycle Crashes at the Macroscopic Level, 98th Annual Meeting of the *Transportation Research Board*, TRB No. 19-00055, Washington DC, January 2019.

458. Gu X., Abdel-Aty M., Xiang Q., Cai Q. and Yuan JH. (2019) Analyzing Crash Risk at Interchange Merging Areas using Aerial Data, 98th Annual Meeting of the *Transportation Research Board*, TRB No. 19-00286, Washington DC, January 2019.

459. Yuan JH and Abdel-Aty M. (2019) Real-Time Crash Risk Analysis for Signalized Intersections, 98th Annual Meeting of the *Transportation Research Board*, TRB No. 19-03593, Washington DC, January 2019.

460. Huang H., Zhou H., Chang F., Xu P. and Abdel-Aty M. (2019) Incorporating Spatial Effects into Temporal Dynamic of Traffic Fatality Risk: A Case Study on Lower States in the USA, 98th Annual Meeting of the *Transportation Research Board*, TRB No. 19-03389, Washington DC, January 2019.

461. Wang L., Abdel-Aty M., Ma W. and Hu J. (2019) Vehicle-Trajectory-based Real-time Safety, Analysis, 98th Annual Meeting of the *Transportation Research Board*, TRB No. 19-02313, Washington DC, January 2019.

462. Gong YB, Abdel-Aty M., Cai Q. and Rahman S. (2019) A Decentralized Network Level Adaptive Signal Control Algorithm by Deep Reinforcement Learning, 98th Annual Meeting of the *Transportation Research Board*, TRB No. 19-03479, Washington DC, January 2019.

463. Abdel-Aty M. and Wang L., Implementation of Ramp Metering to Improve Safety of Congested Expressway Weaving Segments, Road Safety on 5 Continents, Jeju, South Korea, May 16-18, 2018.

464. Abdel-Aty M., and Wang L., Exploring Microscopic Crash Mechanisms of Freeway-to-Freeway Interchange Ramps, Road Safety on 5 Continents, Jeju, South Korea, May 16-18, 2018.

465. Farid A., Abdel-Aty M. and Lee JY (2018). A Novel Approach for Calibrating Safety Performance Functions, accepted for presentation at 97th Annual Meeting of the *Transportation Research Board*, TRB No. 18-00658, Washington DC, January 2018.

466. Farid A., Abdel-Aty M. and Lee JY (2018) Transferring and Calibrating Safety Performance Functions among Multiple States, accepted for presentation at 97th Annual Meeting of the *Transportation Research Board*, TRB No. 18- 00109, Washington DC, January 2018.

467. Cai Q., Abdel-Aty M., Lee JY and Huang H. (2018) Integrating Macro and Micro Level Safety Analyses: A Bayesian Approach Incorporating Spatial Interaction, accepted for presentation at 97th Annual Meeting of the *Transportation Research Board*, TRB No. 18-00144, Washington DC, January 2018.

468. Park JY and Abdel-Aty M., Wu Y and Mattei I. (2018) Optimization of in-vehicle warning and assistance information design under reduced visibility in connected vehicle environment, accepted for presentation at 97th Annual Meeting of the *Transportation Research Board*, TRB No. 18- 00716, Washington DC, January 2018.

469. Wu Y., Abdel-Aty M., Park JY and Zhu JZ (2018) Effects of Connected-Vehicle Warning Systems on Rear-End Crash Avoidance Behavior under Fog Conditions, accepted for presentation at 97th Annual Meeting of the *Transportation Research Board*, TRB No. 18- 01064, Washington DC, January 2018.

470. Gong Y., Abdel-Aty M., Park JY and Ponnaluri R. (2018) Evaluation and Augmentation of Traffic Data from Private Sector and Bluetooth Detection System on Arterials, accepted for presentation at 97th Annual Meeting of the *Transportation Research Board*, TRB No. 18- 01590, Washington DC, January 2018.

471. Yuan JH., Abdel-Aty M., Wang L., Lee JY., Wang XS. And Yu RJ. (2018) Real-Time Crash Risk Analysis of Urban Arterials Incorporating Bluetooth, Weather, and Adaptive Signal Control Data, accepted for presentation at 97th Annual Meeting of the *Transportation Research Board*, TRB No. 18-00590, Washington DC, January 2018.

472. Wang L., Abdel-Aty M. and Lee JY (2018) Safety Analytics for Integrating Crash Frequency and Real-Time Risk Modeling for Expressways, accepted for presentation at 97th Annual Meeting of the *Transportation Research Board*, TRB No. 18-00800, Washington DC, January 2018.

473. Cai Q., Abdel-Aty M., Lee JY, Wang L. and Wang XS. (2018) Exploration of Macrollevel Effects for Segment and Intersection Crash Modeling, accepted for presentation at 97th Annual Meeting of the *Transportation Research Board*, TRB No. 18-00618, Washington DC, January 2018.

474. Li J., Wang XS, Abdel-Aty M. and Y RJ (2018) Exploring the Transferability of Cross-Country Safety Performance Functions for Urban Arterials with Pooled Data, accepted for presentation at 97th Annual Meeting of the *Transportation Research Board*, TRB No. 18-04325, Washington DC, January 2018.

475. Hasan S., Roy K., Hasnat M. and Abdel-Aty M. (2018) Sharing Real-Time Traffic

Information with Travelers Using Social Media: An Analysis of Twitter Activities, Influence, and Effectiveness, accepted for presentation at 97th Annual Meeting of the *Transportation Research Board*, TRB No. 18-03857, Washington DC, January 2018.

476. Fountas G., Anastasopoulos P. and Abdel-Aty M. (2018) Analysis of Accident Injury Severities Using a Time-Variant Correlated Random Parameters Ordered Probit Approach, accepted for presentation at 97th Annual Meeting of the *Transportation Research Board*, TRB No. 18-03237, Washington DC, January 2018.

477. Stylianou K., Dimitriou L. and Abdel-Aty M. (2018) Development of a Spatiotemporal Hybrid Conflict Severity Indicator on Urban Network, accepted for presentation at 97th Annual Meeting of the *Transportation Research Board*, TRB No. 18-03363, Washington DC, January 2018.

478. Yue L., Abdel-Aty M. and Wang L. (2018) Assessment of the Safety Benefits of Connected and Autonomous Vehicle Technologies, accepted for presentation at 97th Annual Meeting of the *Transportation Research Board*, TRB No. 18-03482, Washington DC, January 2018.

479. Saad M., Abdel-Aty M., Lee JY. And Wang L. (2018) Access Design Safety Analysis for Managed Lanes Including Accessibility Level and Weaving Length, accepted for presentation at 97th Annual Meeting of the *Transportation Research Board*, TRB No. 18-00860, Washington DC, January 2018.

480. Abdel-Aty M. and Wang L. (2017) Implementation of Variable Speed Limits to Improve Safety of a Congested Expressway Weaving Segment in Microsimulation, 20th EURO Working Group on Transportation Meeting, EWGT 2017, 4-6 September 2017, Budapest, Hungary.

481. Abdel-Aty M. And Wang L. (2017) Reducing Real-Time Crash Risk for Congested Expressway Weaving Segments using Ramp Metering, 5th IEEE International Conference on Models and Technologies for Intelligent Transportation Systems, MT-ITS 2017 - Proceedings 8005733, pp. 550-555, Naples, Italy, June 26-28.

482. Wu Y., Abdel-Aty M. and Park JY (2017) Developing Rear-End Crash Risk Algorithm under Fog Conditions using Real-Time Data, 5th IEEE International Conference on Models and Technologies for Intelligent Transportation Systems, MT-ITS 2017 - Proceedings 8005736, pp. 568-573, Naples, Italy, June 26-28.

483. Abuzwidah M. and Abdel-Aty M. (2017), Modelling of traffic safety of traditional mainline toll plazas, International Conference on Advances in Sustainable Construction Materials & Civil Engineering Systems (ASCMCES), Sharjah, April 2017.

484. Wu Y., Abdel-Aty M., Cai Q., Lee JY and Park JY (2017) Rear-End Crash Risk Algorithm Under Fog Conditions Based on Kinematics Analysis, accepted for presentation at 96th Annual Meeting of the *Transportation Research Board*, TRB No. 17-02271, Washington DC, January 2017.

485. Shah M., Abdel-Aty M. and Lee JY (2017) Evaluation of Surrogate Measures for Pedestrian Exposure to Traffic Crashes at Intersections, accepted for presentation at 96th Annual Meeting of the *Transportation Research Board*, TRB No. 17-03402, Washington DC, January 2017.

486. Bustamante C., Abdel-Aty M. and Lee JY (2017) State- and Driver-Level Analyses of the Effects of the Child Restraint Law, accepted for presentation at 96th Annual Meeting of the *Transportation Research Board*, TRB No. 17-05633, Washington DC, January 2017.

487. Cai Q., Abdel-Aty M. and Lee JY (2017) Bayesian Joint Approach of Frequency and

Proportion Modeling at Macro Level: Case Study of Crashes Involving Pedestrians or Bicyclists, accepted for presentation at 96th Annual Meeting of the *Transportation Research Board*, TRB No. 17-03158, Washington DC, January 2017.

488. Chung WB, Abdel-Aty M. and Lee JY (2017) Viability of Land-Based Weather Station Data on Highways: National-Level and Region-Level Analyses, accepted for presentation at 96th Annual Meeting of the *Transportation Research Board*, TRB No. 17-03994, Washington DC, January 2017.

489. Lee JY, Abdel-Aty M., Huang H. and Cai Q. (2017), Intersection Safety Performance Functions with Macro-Level Data from Various Geographic Units, accepted for presentation at 96th Annual Meeting of the *Transportation Research Board*, TRB No. 17-00932, Washington DC, January 2017.

490. Cai Q., Abdel-Aty M., Lee JY and Eluru N. (2017) Comparative Analysis of Zonal Systems for Macro-level Crash Modeling: Census Tracts, Traffic Analysis Zones, and Traffic Analysis Districts, accepted for presentation at 96th Annual Meeting of the *Transportation Research Board*, TRB No. 17-01200, Washington DC, January 2017.

491. Lee JY, Abdel-Aty M. and Park JY (2017) Investigation of Traffic Crashes Caused by Driving Under the Influence near Colleges and Universities, accepted for presentation at 96th Annual Meeting of the *Transportation Research Board*, TRB No. 17-00916, Washington DC, January 2017.

492. Wang L., Abdel-Aty M., Wang X. and Yu R. (2016) Analysis and Comparison of Safety Models Using AADT, Hourly Traffic, and Microscopic Traffic, accepted for presentation at 96th Annual Meeting of the *Transportation Research Board*, TRB No. 17-01165, Washington DC, January 2017.

493. Wu Y., Abdel-Aty M., Park JY and Selby R. (2017) Analysis of the Impact of Fog Warning systems on Driver Behavior Under Reduced Visibility Conditions Using a Driving Simulator, accepted for presentation at 96th Annual Meeting of the *Transportation Research Board*, TRB No. 17-02698, Washington DC, January 2017.

494. Haleem K. and Abdel-Aty M. (2017) Safety Investigation of Combining Ramp Metering and Variable Speed Limits Strategies on Urban Freeways: A Simulation Study, accepted for presentation at 96th Annual Meeting of the *Transportation Research Board*, TRB No. 17-01045, Washington DC, January 2017.

495. Abuzwidah M. and Abdel-Aty M. (2017) Effects of Using High Occupancy Toll Lanes on Safety Performance of Freeways, accepted for presentation at 96th Annual Meeting of the *Transportation Research Board*, TRB No. 17-06894, Washington DC, January 2017.

496. Yasmin S., Eluru N., Wang L. and Abdel-Aty M. (2017) Joint Framework for Static and Real-Time Crash Risk Analysis, accepted for presentation at 96th Annual Meeting of the *Transportation Research Board*, TRB No. 17-05406, Washington DC, January 2017.

497. Stylianou K, Dimitriou L. and Abdel-Aty M. (2017) Investigating Rear-End Collision Potential at Signalized Urban Networks Based on Disaggregated Spatial Sensor Data, accepted for presentation at 96th Annual Meeting of the *Transportation Research Board*, TRB No. 17-03330, Washington DC, January 2017.

498. Alarifi S., AlKahtani K., Abdel-Aty M., Kher S., Mohammed A. and Almojil A. (2017) Safety Evaluation of a Main Corridor in a Developing Country Using a Survey Based Approach, accepted for presentation at 96th Annual Meeting of the *Transportation Research Board*, TRB No. 17-03582, Washington DC, January 2017.

499. Alkahtani K., Abdel-Aty M. and Lee JY (2017) Zonal-Level Safety Investigation of

Pedestrian Crashes in Riyadh, Saudi Arabia, accepted for presentation at 96th Annual Meeting of the *Transportation Research Board*, TRB No. 17-06178, Washington DC, January 2017.

500. Wu Y and Abdel-Aty M. (2016) Crash Risk Analysis during Fog Conditions using Real-Time Traffic, *Road Safety on 5 Continents*, Rio de Janeiro, Brazil, May 2016.

501. Wang L., Abdel-Aty M., Lee JY and Shi Q. (2016) Analysis of Real-time Crash Risk and Crash Frequency for Expressway Ramps Using Traffic, Geometric, Land-use, and Trip Generation Predictors, 14th World Conference on Transport Research, Shanghai, China, July 2016. Received Best Paper Award

502. Park JY, Abdel-Aty M and Lee JY (2016) Evaluation of the Safety Effectiveness of Installing Roadside Barriers with different driver, vehicle, weather, and time of day conditions, accepted for presentation at 95th Annual Meeting of the *Transportation Research Board*, TRB No. 16-0678, Washington DC, January 2016.

503. Al Kaaf K. and Abdel-Aty M. (2016) Transferability of Safety Performance Functions between HSM and Two Countries: The Case of Urban Four-Lane Divided Roadways in Muscat, accepted for presentation at 95th Annual Meeting of the *Transportation Research Board*, TRB No. 16-1666, Washington DC, January 2016.

504. Alirezaei M., Onat N., Tatari O. and Abdel-Aty M. (2016) Impacts of Climate Change on Road Safety: System Dynamics Approach, accepted for presentation at 95th Annual Meeting of the *Transportation Research Board*, TRB No. 16-0666, Washington DC, January 2016.

505. Wang L., Abdel-Aty M., Shi Q. and Park JY. (2016) Predicting Expressway Weaving-Segment Crashes Using Bayesian Multilevel Logistic Regression, accepted for presentation at 95th Annual Meeting of the *Transportation Research Board*, TRB No. 16-1103, Washington DC, January 2016.

506. Park JY. and Abdel-Aty M. (2016) Using Generalized Nonlinear Models to Develop Crash Modification Factors for Multiple Cross Sectional Features of Urban Arterials, accepted for presentation at 95th Annual Meeting of the *Transportation Research Board*, TRB No. 16-1673, Washington DC, January 2016.

507. Wu Y., Abdel-Aty M., Lee JY and Wilson M. (2016) Crash Risk Analysis under Fog Conditions on Full Access Controlled Highways Using Real-Time Traffic Data, accepted for presentation at 95th Annual Meeting of the *Transportation Research Board*, TRB No. 16-2137, Washington DC, January 2016.

508. Cai Q., Lee JY, Eluru N. and Abdel-Aty M (2016) Macrolevel Pedestrian and Bicycle Crash Analysis Incorporating Spatial Spillover Effects in Dual-State Count Models, accepted for presentation at 95th Annual Meeting of the *Transportation Research Board*, TRB No. 16-2469, Washington DC, January 2016.

509. Al Amili S., Abdel-Aty M., Lee JY and Shi Q. (2016) Dynamic Hotspot Identification for Expressways Using Real-Time Traffic Data, accepted for presentation at 95th Annual Meeting of the *Transportation Research Board*, TRB No. 16-3820, Washington DC, January 2016.

510. Lee JY., Yasmin S., Eluru N., Abdel-Aty M. and Cai Q. (2016) Macroscopic Analysis of Crash Proportion by Mode: Fractional Split Multinomial Logit Modeling Approach, accepted for presentation at 95th Annual Meeting of the *Transportation Research Board*, TRB No. 16-3848, Washington DC, January 2016.

511. Lee JY and Abdel-Aty M. (2016) Exploring Zonal Level Bicycle Traffic Crashes and Hot

Zone Identification, accepted for presentation at 95th Annual Meeting of the *Transportation Research Board*, TRB No. 16-4000, Washington DC, January 2016.

512. Farid A., Abdel-Aty M., Lee JY., Eluru N. and Wang JH. (2016) Exploring Transferability of Safety Performance Functions: A Case Study of Rural Multilane Divided Highway Segments, accepted for presentation at 95th Annual Meeting of the *Transportation Research Board*, TRB No. 16-5119, Washington DC, January 2016.

513. Peng Y., Abdel-Aty M. and Shi Q. (2016) Examining the Impact of Reduced Visibility on Traffic Crash Risk Using Microscopic Traffic Parameters and Surrogate Safety Measures, accepted for presentation at 95th Annual Meeting of the *Transportation Research Board*, TRB No. 16-3918, Washington DC, January 2016.

514. Dong N., Huang H., Lee J., Gao M. and Abdel-Aty M. (2016) Macroscopic Hotspot Identification: Bayesian Spatiotemporal Interaction Approach, accepted for presentation at 95th Annual Meeting of the *Transportation Research Board*, TRB No. 16-4515, Washington DC, January 2016.

515. Alamili S., Abdel-Aty M., Lee JY (2016) Dynamic Hotspot Identification for Expressways using Real-Time Traffic Data, presented at 95th Annual Meeting of the *Transportation Research Board*, TRB No. 16-3820, Washington DC, January 2016.

516. Shi Q. and Abdel-Aty M. (2015) On Ramp Closure Practices and Procedures: A Survey for Expressway Risk Management, 25th World Road Congress, Seoul, November 2-6, 2015.

517. Park JY and Abdel-Aty M. (2015) Assessing Safety Effects of Changing Bike Lane Width Using Generalized Nonlinear Models in Cross-Sectional Analysis, 25th World Road Congress, Seoul, November 2-6, 2015.

518. Park JY, Abdel-Aty M. and Wang JH. (2015) Development of Crash Modification Factors and Functions for Widening Shoulder Width on Rural Two-Lane Roadways, 25th World Road Congress, Seoul, November 2-6, 2015.

519. Abuzwidah M. and Abdel-Aty M. (2015) Traffic Safety Assessment of Traditional Mainline Toll Plazas on Expressways, Road Safety & Simulation International Conference, Orlando, Florida, Oct. 6-8, 2015.

520. Lee, J., Abdel-Aty, Shi, Q. (2015). Comprehensive DUI Crash Analysis Using Data from Multiple Sources. Road Safety & Simulation International Conference, Orlando, Florida, Oct. 6-8, 2015.

521. Lee, J., Nam, B., Abdel-Aty, M. (2015). Examining the Relationship between Pavement Surface Conditions and the Crash Injury Severity. Road Safety & Simulation International Conference, Orlando, Florida, Oct. 6-8, 2015.

522. Lee, J., Abdel-Aty, M., & Huang, H. (2015). Pedestrian Safety Data Analytics: Modeling and Screening for Residence and Crash Zones. Road Safety & Simulation International Conference, Orlando, Florida, Oct. 6-8, 2015.

523. Wang JH, Abdel-Aty M., Selby R. and Strobridge K. (2015) Comprehensive Safety Evaluation of Roadway Features at Intersections in Florida, Proceedings of the Road Safety & Simulation International Conference, Orlando, Florida, Oct. 6-8, 2015.

524. Shi Q. and Abdel-Aty M. (2016) Traffic Operation and Safety: How Crashes Affect Congestion on Urban Expressways, Proceedings of the Road Safety & Simulation International Conference, Orlando, Florida, Oct. 6-8, 2015.

525. Lee JY, Nam B., and Abdel-Aty M (2015) Examining the Relationship between

Pavement Surface Conditions and Crash Injury Severity, Proceedings of the Road Safety & Simulation International Conference, Orlando, Florida, Oct. 6-8, 2015.

526. Alirezaie M., Onat N., Tatari O. and Abdel-Aty M. (2015) A Dynamic Simulation Approach to Assess the Climate Change Impacts on Road Safety, Proceedings of the Road Safety & Simulation International Conference, Orlando, Florida, Oct. 6-8, 2015.

527. Shi Q. and Abdel-Aty M. (2015) Urban Expressway Traffic Safety and Operation Evaluation and Improvement Using Big Data, Proceedings of the Road Safety & Simulation International Conference, Orlando, Florida, Oct. 6-8, 2015.

528. Shi Q., Abdel-Aty M. and Lee JY. (2015) Analysis of Congestion's Impact on Urban Expressway Safety: A Bayesian Ridge Regression Approach, Proceedings of the Road Safety & Simulation International Conference, Orlando, Florida, Oct. 6-8, 2015.

529. Alarifi S. and Abdel-Aty M. (2015) Safety Effectiveness of Conversion of Two-Way-Left-Turn Lanes into Raised Medians, Proceedings of the Road Safety & Simulation International Conference, Orlando, Florida, Oct. 6-8, 2015.

530. Alarifi S., Alkahtani K., Abdel-Aty M., Kher S., Mohammad A. and Almojil A. (2015) Corridor Safety Evaluation in Saudi Arabia using User and Expert Survey Approach, Proceedings of the Road Safety & Simulation International Conference, Orlando, Florida, Oct. 6-8, 2015.

531. Park JY., Abdel-Aty M., Meeker E. and Carroll K. (2015) Safety Effects of Roadside Barriers for Different Crash Types and Severities with Crash Information, Proceedings of the Road Safety & Simulation International Conference, Orlando, Florida, Oct. 6-8, 2015.

532. Wang L. and Abdel-Aty M. (2015) Conflict Precursors for Expressway Weaving Segments Based on Microscopic Simulation, Proceedings of the Road Safety & Simulation International Conference, Orlando, Florida, Oct. 6-8, 2015.

533. Lee, J., Kuo, P.F., & Abdel-Aty, M. (2015). Comparative Analysis of Hot Zone Identification Methods at the Macroscopic Level. Road Safety & Simulation International Conference, Orlando, Florida, Oct. 6-8, 2015.

534. Ahmed M, Abdel-Aty M. and Park JY. (2015) Safety Effectiveness of the Conversion of Two-Lane Roadways to Four-Lane Roadways, 5th International Symposium on Highway Geometric Design, Vancouver, Canada, June 21-24.

535. Peng Y, Abdel-Aty M. and Lee J. (2015) Analysis of the Impact of Fog-related Reduced Visibility on Traffic Parameters, accepted for presentation at 94th Annual Meeting of the *Transportation Research Board*, TRB No. 15-2271, Washington DC, January 2015.

536. Abdel-Aty M. and Shi Q. (2014) Viability of Automatic Vehicle Identification Data in Traffic Operation and Safety Analyses, 11th International Congress on Advances in Civil Engineering, October 2014, Istanbul, Turkey.

537. Yu R. and Abdel-Aty M. (2014) Optimal Variable Speed Limit System to Ameliorate Traffic Safety Risk, accepted for presentation at 93rd Annual Meeting of the *Transportation Research Board*, TRB No. 14-0539, Washington DC, January 2014.

538. Wang JH and Abdel-Aty M. (2014) Comparison of Safety Evaluation Approaches for Intersection Signalization in Florida, accepted for presentation at 93rd Annual Meeting of the *Transportation Research Board*, TRB No. 14-0374, Washington DC, January 2014.

539. Yu and Abdel-Aty M. (2014) A Correlated Random Parameter Approach to Investigate the Effects of Weather Conditions on Crash Risk for a Mountainous Freeway, accepted for presentation at 93rd Annual Meeting of the *Transportation Research Board*, TRB No. 14-0540, Washington DC, January 2014.

540. Jiang X., Abdel-Aty M. and Alamili S. (2014) Application of Poisson Random Effect Models for Highway Network Screening, accepted for presentation at 93rd Annual Meeting of the *Transportation Research Board*, TRB No. 14-0289, Washington DC, January 2014.

541. Shi Q., Abdel-Aty M. and Yu R. (2014) Identifying risk factors for urban expressway traffic crashes using Multi-level Bayesian models with unprocessed Automatic Vehicle Identification data, accepted for presentation at 93rd Annual Meeting of the *Transportation Research Board*, TRB No. 14-0303, Washington DC, January 2014.

542. Jiang X. and Abdel-Aty M. (2014) Investigating Macro-level Hotzone Identification and Variable Importance Using Random Forest Models, accepted for presentation at 93rd Annual Meeting of the *Transportation Research Board*, TRB No. 14-0337, Washington DC, January 2014.

543. Lee J. and Abdel-Aty M. (2014) Macroscopic Multivariate Crash Modeling for Motor Vehicle, Bicycle and Pedestrian Crashes, accepted for presentation at 93rd Annual Meeting of the *Transportation Research Board*, TRB No. 14-0424, Washington DC, January 2014.

544. Yu R. and Abdel-Aty M. (2014) Analyzing Crash Injury Severity on Multiple Facilities with Real-time Weather and Speed Data, accepted for presentation at 93rd Annual Meeting of the *Transportation Research Board*, TRB No. 14-1036, Washington DC, January 2014.

545. Wu J., Abdel-Aty M., Yu R., and Gao Z. (2014) Novel Visible Network Approach for Freeway Crash Analysis, accepted for presentation at 93rd Annual Meeting of the *Transportation Research Board*, TRB No. 14-0760, Washington DC, January 2014.

546. Ahmed M. and Abdel-Aty M. (2014) Evaluation and Spatial Analysis of the Safety Effectiveness of Red-Light Running Enforcement Cameras, accepted for presentation at 93rd Annual Meeting of the *Transportation Research Board*, TRB No. 14-0397, Washington DC, January 2014.

547. Abdel-Aty M. (2013) Improving Visibility Detection Systems on Highways, 17th IRF World Meeting, November, Riyadh, Saudi Arabia.

548. Abdel-Aty M. and Yu R. (2013) State-of-Practice of Variable Speed limits System, 20th ITS World Congress, October, Tokyo, Japan.

549. Abdel-Aty M., Lee J., Choi K. and Siddiqui C. (2013) Analysis of Zonal Characteristics of Drivers Involved in Traffic Crashes, World Conference on Transportation Research (WCTR), Rio de Janeiro, Brazil, July 2013.

550. Lee J., Choi K. and Abdel-Aty M. (2013) Safety Implications of Young drivers Attitudes, Perceptions and Behavior in Korea, World Conference on Transportation Research (WCTR), Rio de Janeiro, Brazil, July 2013.

551. Abdel-Aty M., Lee J., Choi K. and Siddiqui C. (2013) Demographic and Socioeconomic Factors Associated with Traffic Crash Involvement in Florida, 16th International Conference Road Safety on Four Continents, Beijing, China 15-17 May 2013.

552. Yu R. and Abdel-Aty M. (2013) Developing Safety Performance Functions for a Mountainous Freeway, 16th International Conference Road Safety on Four Continents, Beijing, China 15-17 May 2013.

553. Yu R. and Abdel-Aty M. (2013) Developing Hierarchical Bayesian Safety Performance Functions Using Real-Time Weather and Traffic Data, 16th International Conference Road Safety on Four Continents, Beijing, China 15-17 May 2013.

554. Yu R., Abdel-Aty M., Ahmed M. and Wang X. (2013) Crash Type Propensity Analysis with Bayesian Models using Microscopic Traffic and Weather Data, TRB No. 13-0718, presented at 92nd Annual Meeting of the *Transportation Research Board*, Washington DC,

January 2013. Included in the TRB on-line compendium of papers.

555. Ahmed M., Abdel-Aty M., Shi Q. and Abuzwidah M (2013), Synthesis of State-of-the-Art in Visibility Detection Systems' Applications and Research, TRB No. 13-0832, presented at 92nd Annual Meeting of the *Transportation Research Board*, Washington DC, January 2013. Included in the TRB on-line compendium of papers.

556. Lee J., Choi K. and Abdel-Aty M. (2013) An Investigation into Young Drivers' Attitudes, Perceptions and Behavior in Korea, TRB No. 13-0655, presented at 92nd Annual Meeting of the *Transportation Research Board*, Washington DC, January 2013. Included in the TRB on-line compendium of papers.

557. Ahmed M, Abdel-Aty M., Lee J. and Yu R. (2013) Exploring the Feasibility of Using Airport Data in Real-Time Risk Assessment, TRB No. 13-0834, presented at 92nd Annual Meeting of the *Transportation Research Board*, Washington DC, January 2013. Included in the TRB on-line compendium of papers.

558. Yu R. and Abdel-Aty M. (2013) Formulating Informative Priors and the Effects on Bayesian Hierarchical Crash Models, TRB No. 13-0222, presented at 92nd Annual Meeting of the *Transportation Research Board*, Washington DC, January 2013. Included in the TRB on-line compendium of papers.

559. Huang H., Hu S. and Abdel-Aty M. (2013) Indexing Crash Worthiness and Crash Aggressivity by Major Car Brands, TRB No. 13-1754, presented at 92nd Annual Meeting of the *Transportation Research Board*, Washington DC, January 2013. Included in the TRB on-line compendium of papers.

560. Wang X., Xie K., Abdel-Aty M., Tremont P. and Chen X. (2013) A Systematic Approach for Hazardous Intersection Identification and Countermeasure Development, TRB No. 13-2698, presented at 92nd Annual Meeting of the *Transportation Research Board*, Washington DC, January 2013. Included in the TRB on-line compendium of papers.

561. Lee J., Abdel-Aty M., Choi K. and Siddiqui C. (2013) Analysis of Residence Characteristics of Drivers, Pedestrians and Bicyclists Involved in Traffic Crashes, TRB No. 13-2228, presented at 92nd Annual Meeting of the *Transportation Research Board*, Washington DC, January 2013. Included in the TRB on-line compendium of papers.

562. Hassan H., Dimitriou L., Abdel-Aty M. and Al-Ghamdi A. (2013) Analysis of Risk Factors Affecting the Size and Severity of Traffic Crashes in Riyadh, TRB No. 13-2333, presented at 92nd Annual Meeting of the *Transportation Research Board*, Washington DC, January 2013. Included in the TRB on-line compendium of papers.

563. Huang H. and Abdel-Aty M. (2013) Transportation Safety Planning: a Spatial Analysis Approach, TRB No. 13-1855, presented at 92nd Annual Meeting of the *Transportation Research Board*, Washington DC, January 2013. Included in the TRB on-line compendium of papers.

564. Dimitriou L. and Abdel-Aty M. (2013) A Genetically Optimized Fuzzy Resource Allocation Model for Improving Road Safety in Interurban Highways Networks, TRB No. 13-3646, presented at 92nd Annual Meeting of the *Transportation Research Board*, Washington DC, January 2013. Included in the TRB on-line compendium of papers.

565. Ahmed M., Abdel-Aty M. and Yu R. (2012) Linking crash occurrence to real-time weather conditions and AVI traffic data: ensemble data-mining approach, 19th ITS World Congress, October, Vienna, Austria.

566. Abdel-Aty M., Ahmed M. and Yu R. (2012) Exploring the Safety Application of Automatic Vehicle Identification Data, Annual General Conference of the Canadian

Society of Civil Engineers, Edmonton, Alberta, June 6-9, 2012.

567. Siddiqui C., Abdel-Aty M. and Choi K. (2012) A Comparison of Geographical Unit-Based Macro-Level Safety Modeling, Preprint No. TRB 12-0243, presented at 91st Annual Meeting of the *Transportation Research Board*, Washington DC, January 2012. Included in the TRB on-line compendium of papers.

568. Abdel-Aty M., Hassan H. and Ahmed M. (2012) Real-time Analysis of Visibility Related Crashes: Can Loop Detector and AVI Data Predict them Equally, Preprint No. TRB 12-0113, presented at the 91st Annual Meeting of the *Transportation Research Board*, January 2012. Included in the TRB on-line compendium of papers.

569. Haleem K. and Abdel-Aty M. (2012) Examining the Median Types Near Unsignalized Intersections to Identify the Interplay Between Safety and Access Management, Preprint No. TRB 12-0419, presented at the 91st Annual Meeting of the *Transportation Research Board*, January 2012. Included in the TRB on-line compendium of papers.

570. Hassan H., Abdel-Aty M., Oloufa A. and Morrow R. (2011) Use and Content of CMS and VSL Under Low Visibility Conditions, 18th ITS World Congress, October 18, Orlando, Florida.

571. Ahmed M., Yu R. and Abdel-Aty M. (2011) Safety Applications of Automatic Vehicle Identification and Weather Data on Freeways, 18th ITS World Congress, October 17, Orlando, Florida.

572. Abdel-Aty M., Siddiqui C. and Huang H. (2011) Managing Roadway Safety at the Traffic Analysis Zones' Level, *1st International Conference on Transportation Information and Safety (ICTIS 2011)*, June 30th ~July 2nd 2011, Wuhan, China

573. Huang H., Abdel-Aty M. and Siddiqui C. (2011) Development of Crash Worthiness Index and Crash Aggressivity Index, *1st International Conference on Transportation Information and Safety (ICTIS 2011)*, June 30th ~July 2nd 2011, Wuhan, China

574. Hassan H., Abdel-Aty M. and Oloufa A. (2011) The Effect of Warning Messages And Variable Speeds In Different Visibility Conditions, Preprint No. TRB 11-0354, 90th Annual Meeting of the *Transportation Research Board*, January 2011.

575. Hassan H. and Abdel-Aty M. (2011) Exploring Visibility Related Crashes on Freeways based On Real-time Traffic Flow Data, Preprint No. TRB 11-0920, 90th Annual Meeting of the *Transportation Research Board*, January 2011.

576. Siddiqui C., Abdel-Aty M. and Huang H. (2011) Zonal Level Safety Evaluation Incorporating Trip Generation Effects, Preprint No. TRB 11-0104, 90th Annual Meeting of the *Transportation Research Board*, January 2011.

577. Haleem K. and Abdel-Aty M. (2011) The Group Least Absolute Shrinkage and Selection Operator "GLASSO" Technique: Application in Variable Selection and Crash Prediction At Unsignalized Intersections, Preprint No. TRB 11-0091, 90th Annual Meeting of the *Transportation Research Board*, January 2011.

578. Park P. and Abdel-Aty M. (2011) Development of a Proactive Hotspot Identification Method for Urban Arterials Using a Stochastic Catastrophe Model, Preprint No. TRB 11-0519, 90th Annual Meeting of the *Transportation Research Board*, January 2011.

579. Wang W., Yan X., Huang H., Chi X. and Abdel-Aty M. (2011) Design of a Laser Technique Device for Pavement Macrotexture Measurement, Preprint No. TRB 11-1053, 90th Annual Meeting of the *Transportation Research Board*, January 2011.

580. Abdel-Aty M. and Pande A. (2010) Enhancing Safety through Advanced Proactive Traffic Management, 17th ITS World Congress, October 25-29, Pusan, Korea.

581. Abdel-Aty M., Olooufa A., Hassan H., Ahmed M. and Siddiqui K. (2010) Portable Visibility Warning System for the Safety of Highways, 17th ITS World Congress, October 25-29, Pusan, Korea.

582. Abdel-Aty M., Ekram A. and Huang H. (2010) A Study on Visibility Obstruction Related Crashes Due to Fog and Smoke, 12th World Conference on Transport Research (WCTR), June 11-15, Lisbon, Portugal.

583. Abdel-Aty M. and Haleem K. (2010) Analysis of the Safety Characteristics of Unsignalized Intersections, 12th World Conference on Transport Research (WCTR), June 11-15, Lisbon, Portugal.

584. Huang H., Abdel-Aty M., Ekram A., Olooufa A., Chen Y. and Morrow R. (2010) Fog and Smoke Related Crashes in Florida: Identifying Crash Characteristics, Spatial Distribution and Injury Severity, Preprint No. TRB 10-1323, 89th Annual Meeting of the *Transportation Research Board*, January 2010.

585. Abdel-Aty M., Haleem K., Kerr P. and Santos J. (2010) Web-Based Application for Providing Crash Profiles at Intersections, Preprint No. TRB 10-0947, 89th Annual Meeting of the *Transportation Research Board*, January 2010.

586. Chen Y., Abdel-Aty M., Huang H. and Ma M. (2010) Full Bayesian Classifier of Driver Scene Aesthetics Based on Ordered Models, Preprint No. TRB 10-0918, 89th Annual Meeting of the *Transportation Research Board*, January 2010.

587. Persaud V., Olooufa A. and Abdel-Aty M. (2010) Dynamic Speed Monitoring on Sharp Curves utilizing Green Technologies, Preprint No. TRB 10-2766, 89th Annual Meeting of the *Transportation Research Board*, January 2010.

588. Huang H. and Abdel-Aty M. (2010) Multilevel Data in Traffic Safety: A 5 X ST-Level Hierarchy, Road safety on four continents: 15th international conference, Abu Dhabi, United Arab Emirates, 28-30 March 2010. s 305-318

589. Abdel-Aty M., Siddiqui C., Darwiche A. and Huang H. (2010) Macroscopic Safety Investigation at the Traffic Analysis Zone Level, Road safety on four continents: 15th international conference, Abu Dhabi, United Arab Emirates, 28-30 March 2010. s 519-531

590. Abdel-Aty M. and Gayah V. (2009) Using Traffic Micro-simulation to Test Route Diversion as a Real-Time Crash Prevention Strategy on Freeways, Proceedings of the *International Conference on Road Safety and Simulation RSS 2009*, October 2009, Paris, France.

591. Huang H. and Abdel-Aty M. (2009) Traffic crash hotspot identification: State-of-the-art and future directions, 18th International Conference on Management of Technology, Orlando, April 2009.

592. Ezzat H., Abdel-Aty M., Selter J and Radwan E. (2009) Spreading Technology through Education: Intelligent Transportation Program Between UCF-CATSS and NU, 18th International Conference on Management of Technology, Orlando, April 2009.

593. Nevarez A., Abdel-Aty M., Wang X. and Santos J. (2009) Large Scale Injury Severity Analysis for Arterial Roads: Modeling Scheme And Contributing Factors, Preprint No. TRB 09-0348, 88th Annual Meeting of the *Transportation Research Board*, January 2009.

594. Abdel-Aty M., Devarasetty P., Pande A. and Santos J. (2009) Evaluating Resurfacing Projects On Multilane Arterials and Identifying Best Practices, Preprint No. TRB 09-1884, 88th Annual Meeting of the *Transportation Research Board*, January 2009.

595. Dixit V., Pande A., Abdel-Aty M., Radwan E. and Das A. (2009) Relationship of Two-fluid Model Parameters with Safety On Arterials with Partially Limited Access, Preprint

No. TRB 09-0880, 88th Annual Meeting of the *Transportation Research Board*, January 2009.

596. Pande A. and Abdel-Aty M. (2009) Patterns in Severe Crashes On Segments of Multi-lane Arterials With Partially Limited Access, Preprint No. TRB 09-0552, 88th Annual Meeting of the *Transportation Research Board*, January 2009.

597. Guo F., Wang X. and Abdel-Aty M. (2009) Corridor Level Signalized Intersection Safety Analysis Using Bayesian Spatial Models, Preprint No. TRB 09-1163, 88th Annual Meeting of the *Transportation Research Board*, January 2009.

598. Das A., Abdel-Aty M., Pande A. and Santos J. (2009) Severity Analysis of Crashes On Multilane Arterials Using Conditional Inference Forests, Preprint No. TRB 09-1511, 88th Annual Meeting of the *Transportation Research Board*, January 2009.

599. Lee C., Park P. and Abdel-Aty M. (2009) Real-Time Estimation of Lane-Change and Car-Following-Related Traffic Flow Parameters and Their Effects on Crash Occurrence by Lane, Preprint No. TRB 09-1909, 88th Annual Meeting of the *Transportation Research Board*, January 2009.

600. Harb R., Radwan E., Ramasamy S., Abdel-Aty M. and Pande A. (2009) Two Simplified Dynamic Lane Merging System (SDLMS) for Short Term Work Zones, Preprint No. TRB 09-1668, 88th Annual Meeting of the *Transportation Research Board*, January 2009.

601. Abdel-Aty M. and Pande A. (2008) The Viability of Real-time Prediction and Prevention of Traffic Accidents, the Fourth International Gulf Conference on Roads, Doha, November 2008.

602. Gayah V., Abdel-Aty M. and Pande A. (2008) Evaluating Route Diversion as a Strategy for Reduction of Real-Time Crash Risk on Freeways Using Microscopic Simulation, 10th International Conference on Applications of Advanced Technologies in Transportation (AATT), Athens, May 2008.

603. Abdel-Aty M., Pande A., Das A. and Knibbe W. (2008) Exploration of Crash Prone Traffic Conditions on Freeways in the Netherlands using Random Forests, 10th International Conference on Applications of Advanced Technologies in Transportation (AATT), Athens, May 2008.

604. Abdel-Aty M. and Pande A. (2008) Proactive Traffic Management using ITS data from Uninterrupted Flow Facilities, Transportation Planning and Implementation Methodologies for Developing Countries, IIT Bombay, Dec. 3-6, 2008.

605. Das A., Abdel-Aty M. and Pande A. (2008) Severity Analysis of Crashes on Multilane Arterials Using Conditional Inference Forests, Transportation Planning and Implementation Methodologies for Developing Countries, IIT Bombay, Dec. 3-6, 2008.

606. Abdel-Aty M. and Gayah V. (2008) Comparison of Two Different Ramp Metering Algorithms for Real-time Crash Risk Reduction, Preprint No. TRB 08-0020, 87th Annual Meeting of the *Transportation Research Board*, January 2008.

607. Abdel-Aty M. and Gayah V. (2008) Considering Route Diversion As A Real-time Crash Prevention Strategy on Urban Freeways , Preprint No. TRB 08-0019, 87th Annual Meeting of the *Transportation Research Board*, January 2008.

608. Yan X., Abdel-Aty M., Radwan E., Wang X. and Chilakapati P. (2008) Assessing Rear-End Crash Risk at Signalized Intersections Based on the Driving Behavior, Preprint No. TRB 08-0044, 87th Annual Meeting of the *Transportation Research Board*, January 2008.

609. Wang X. and Abdel-Aty M. (2008) Left-turn Crash Injury Severity Analyses Using

Partial Proportional Odds Models: Significant Factors and Varying Effects, Preprint No. TRB 08-0297, 87th Annual Meeting of the *Transportation Research Board*, January 2008.

610. Abdel-Aty M. and Pande A. (2007) Framework for Real-Time Crash Estimation: Implications of Random and Matched Sampling Schemes, 14th International Conference Road Safety on Four Continents, Bangkok, Thailand, November 2007.

611. Lee C. and Abdel-Aty M. (2007) Relationship Between Presence of Passengers and Freeway Crash Characteristics, 14th International Conference Road Safety on Four Continents, Bangkok, Thailand, November 2007.

612. Dos Santos C. and Abdel-Aty M. (2007) Assessing the Traffic Safety Effects of Variable Speed Limits Using Microscopic Traffic and Driving Simulations, Transport Science and Technology Congress (TRANSTEC), Prague, September 2007.

613. Wang X. and Abdel-Aty M. (2007) Using GEE to Model Right-Angle Crashes at Intersections, Transport Science and Technology Congress (TRANSTEC), Prague, September 2007.

614. Wang X. and Abdel-Aty M. (2007) Temporal and Spatial Safety Analyses of Signalized Intersections, 11th World Conference on Transport Research, Berkeley, California, June 2007.

615. Abdel-Aty M. and Gayah V. (2007) Exploring the Crash Severity Along an Urban Freeway Based on Temporal, Spatial, and Real-Time Traffic Conditions, 11th World Conference on Transport Research, Berkeley, California, June 2007.

616. Lee C. and Abdel-Aty M. (2007) Impact of Presence of Passengers on Freeway Crash Potential, Preprint No. TRB 07-0589, 86th Annual Meeting of the *Transportation Research Board*, January 2007.

617. Pande A. and Abdel-Aty M. (2007) Market Basket Analysis: A Novel Way to Find Patterns In Crash Data From Large Jurisdictions, Preprint No. TRB 07-0055, 86th Annual Meeting of the *Transportation Research Board*, January 2007.

618. Abdel-Aty M. and Dhindsa A. (2007) Coordinated use of Variable Speed Limits and Ramp Metering for Improving Traffic Safety on Congested Freeways, Preprint No. TRB 07-0008, 86th Annual Meeting of the *Transportation Research Board*, January 2007.

619. Yan X., Abdel-Aty M., Radwan E., Wang X. and Chilakapati P. (2007) Using Traffic and Safety Measures for Driving Simulator Validation, Preprint No. TRB 07-0053, 86th Annual Meeting of the *Transportation Research Board*, January 2007.

620. Pande A. and Abdel-Aty M. (2007) Analysis of Output from Crash prediction Models and Their Amalgamation in A Proactive Traffic Management Framework, Preprint No. TRB 07-0529, 86th Annual Meeting of the *Transportation Research Board*, January 2007.

621. Abdel-Aty M., Lee C., Bai Y., Li X. and Michalak M. (2007) A Two-Stage Approach to Identify Flight Delay Patterns, Preprint No. TRB 07-0005, 86th Annual Meeting of the *Transportation Research Board*, January 2007.

622. Abdelawahab H. and Abdel-Aty M. (2007) Nested Logit Mode Choice Models Using Full Information Weighted Exogenous Maximum Likelihood, Al-Azhar Engineering 9th International Conference, Cairo, April 12-14, 2007.

623. Abdel-Aty M. and Pande A. (2006) Properties of Freeway Rear-end Crash Clusters, Proceedings of the 11th International Conference of the Hong Kong Society of Transportation Studies, HK, December 2006.

624. Dos Santos C., Abdel-Aty M. and Yan X. (2006) Using a Driving Simulator to Assess the Safety Benefits of Variable Speed Limits, Proceedings of the 11th International Conference

of the Hong Kong Society of Transportation Studies, HK, December 2006.

625. Gayah V., Dos Santos C., Abdel-Aty M., Dhindsa A. and Dilmore J. (2006) Evaluating ITS Strategies for Real-Time Freeway Safety Improvement, *9th International IEEE Conference on Intelligent Transportation Systems (ITSC2006)*, Toronto, September 2006.

626. Abdel-Aty M. and Dhindsa A. (2006) Evaluation of ITS alternatives targeting crash mitigation on Freeways using Micro-simulation, Applications of Advanced Technologies in Transportation, AATT 2006, ASCE, Chicago, August 2006.

627. Lee C. and Abdel-Aty M. (2006) Real-Time Prediction of Ramp-Related Crash Risk, Applications of Advanced Technologies in Transportation, AATT 2006, ASCE, Chicago, August 2006.

628. Pande A. and Abdel-Aty M. (2006) Application of data mining techniques for real-time crash risk assessment on freeways, Applications of Advanced Technologies in Transportation, AATT 2006, ASCE, Chicago, August 2006.

629. Harb R., Radwan E., Yan X and Abdel-Aty M. (2006) Light Truck Vehicles (LTVs) Contribution to Rear-End Collisions, Preprint No. TRB 06-0995, 85th Annual Meeting of the *Transportation Research Board*, January 2006.

630. Chundi S., Abdel-Aty M., Radwan E., Klee H. and Birriel E. (2005) A Conceptual Approach for Using the UCF Driving Simulator as a Test Bed for High Risk Locations, DSC 2005 North America - Orlando - November 2005

631. Pande A. and Abdel-Aty M. (2005) Identification of Rear-end Crash Patterns on Instrumented Freeways: A Data Mining Approach, *8th International IEEE Conference on Intelligent Transportation Systems (ITSC2005)*, Vienna, September 2005.

632. Abdel-Aty M., Pande A. and Uddin N. (2005) Traffic Surveillance from a Safety Perspective: An ITS Data Application, *8th International IEEE Conference on Intelligent Transportation Systems (ITSC2005)*, Vienna, September 2005.

633. Abdel-Aty M. and Abdalla F. (2005) Simulation Experiments to Investigate Drivers Adherence with Traffic Information, *8th International IEEE Conference on Intelligent Transportation Systems (ITSC2005)*, Vienna, September 2005.

634. Wang X. and Abdel-Aty M. (2005) Modeling Longitudinal Crash Frequencies at Signalized Intersections Using Generalized Estimating Equations with Negative Binomial Link Function, *13th International Conference, Road Safety on Four Continents*, Warsaw, October 2005.

635. Abdel-Aty M., Pande A. and Uddin N. (2005) Proactive Real-Time Safety Implementation Strategy on Freeways, *13th International Conference, Road Safety on Four Continents*, Warsaw, October 2005.

636. Abdel-Aty M. and Abdalla F. (2005) Analysis of ATIS Effect on Mode and Route Choices, *12th World Congress on Intelligent Transportation Systems*, San Francisco, November 2005.

637. Abdel-Aty M. and Pemmanaboina R. (2005), An ATMS Accident Prediction Model using Traffic and Rain Data, *12th World Congress on Intelligent Transportation Systems*, San Francisco, November 2005.

638. Abdel-Aty M., Uddin N. and Pande A. (2005) Improving safety and security by developing a traffic accident prevention system, Proceedings of the *First International Conference on Safety and Security Engineering*, Rome, Italy, June 2005.

639. Abdel-Aty M. and Pande A. (2004) Classification of Real-Time Traffic Speed Patterns to

Predict Crashes on Freeways, Preprint No. TRB 04-2635, 83rd Annual Meeting of the *Transportation Research Board*, January 2004.

640. Abdalla F. and Abdel-Aty M. (2004) Modeling Long- and Short-Term Travel Time under ATIS Using Mixed Linear Models for Correlated Data, Preprint No. TRB 04-4839, 83rd Annual Meeting of the *Transportation Research Board*, January 2004.

641. Abdel-Aty M. and Pande A. (2004) Predicting Traffic Crashes Using Real-Time Traffic Speed Patterns, 10th World Conference on Transport Research, Istanbul, Turkey, July 2004.

642. Abdel-Aty M. and Abdalla F. (2004) Modeling Drivers' Diversion from Normal Route, Link Choice and Compliance Under ATIS Using Generalized Estimating Equations, 10th World Conference on Transport Research, Istanbul, Turkey, July 2004.

643. Abdel-Aty M. and Mohammed A. (2004) Exploring the Safety Risks of Cellular Phone Use While Driving, 10th World Conference on Transport Research, Istanbul, Turkey, July 2004.

644. ElAarag H. and Abdel-Aty M. (2003) Traffic Accident Simulation and Animation, Proceedings of the Summer Computer Simulation Conference (SCSC'03), Montreal, July 2003.

645. Abdel-Aty M. (2003) Spatial Analysis of Expressway Ramps, 8th International Conference on Computers in Urban Planning and Urban Management (CUPUM'03), Sendai, Japan, May 2003.

646. Abdel-Aty M. and Abdalla F. (2003) Computer Simulation and Animation Tool for Realistic Route Choice Data Collection, 8th International Conference on Computers in Urban Planning and Urban Management (CUPUM'03), Sendai, Japan, May 2003.

647. Abdel-Aty M., Aiouche H., Abdelwahab H., Cooper C.D., and Miller R. (2001) Investigating Car Occupancy Rates on Toll Roads: Empirical Results From an Origin-Destination Study and Its Implication on Air Quality, Proceedings of the 94th Annual Conference of the Air and Waste Management Association, Orlando.

648. Abdel-Aty M. and Mejdoub M. (2001) Modeling Severe Traffic Crashes at Intersections, Proceedings of the 9th World Conference on Transport Research (WCTR), Seoul, July 2001.

649. Abdelwahab H. and Abdel-Aty M. (2001) Applying Fuzzy ARTMAP Neural Networks to Predict Driver's Injury Severity in Traffic Accidents, Proceedings of the 9th World Conference on Transport Research (WCTR), Seoul, July 2001.

650. Abdel-Aty M., Abdelwahab H., Aiouche H., and Huang Y. (2001) The Design and Administration of an Origin/Destination Survey for The Central Florida Expressway System, Proceedings of the 9th World Conference on Transport Research (WCTR), Seoul, July 2001.

651. Abdel-Aty M. and Abdelwahab H. (2000) Application of Differential GPS for Collision Avoidance in a Wireless Environment, *Proceedings of the 10th Annual Meeting of ITS America (ITS 2000)*, Boston.

652. Abdel-Aty M. and Jovanis P. (1998) A Survey of the Elderly: An Assessment of their Travel Characteristics, Preprint No. TRB 980001, 77th Annual Meeting of the *Transportation Research Board* (TRB).

653. Abdel-Aty M., Abdallah M. and As-Saidi A. (1997). A Methodology for Route Selection and Guidance Using GIS and Computer Network Models, Preprint No. TRB 970016, 76th Annual Meeting of the *Transportation Research Board*.

654. Abdel-Aty M. (1997). Using Travel Surveys and Experiments to Explore the Potential

Impact of Transit Information Systems on Mode Choice, Proceedings of the 30th *International Symposium on Automotive Technology and Automation*, Florence, Italy.

655. Abdel-Aty M. and Jovanis P. (1997). Using New Technologies to Meet the Transportation Demand of the Special Needs Travelers: A Framework, Proceedings of the 30th *International Symposium on Automotive Technology and Automation*, Florence, Italy.

656. Garib A., Abdel-Aty M. and Radwan E. (1997). Investigating the Factors Influencing the Motor Vehicles' Fire Accidents, Proceedings of the 30th *International Symposium on Automotive Technology and Automation*, Florence, Italy.

657. Abdel-Aty M., Kitamura R. and Jovanis P. (1995) Understanding the Effect of ATIS on Commuters' Route Choice Decisions, Published in the *Proceedings of the 5th Annual Meeting of ITS America*, Vol. 1.

658. Reddy P., Vaughn K., Abdel-Aty M., Kitamura R. & Jovanis P. (1995). Design of a Recurrent Neural Network for Analyzing Route Choice Behavior in the Presence of an Information System, Published in the *Proceedings of the 5th Annual Meeting of ITS America*.

659. Abdel-Aty M., Vaughn K., Jovanis P., Kitamura R. & Manning F. (1994). Impact of Traffic Information on Commuters' Behavior: Empirical Results from Southern California and their Implications for ATIS", Published in the *Proceedings of the 4th Annual Meeting of IVHS America*, Vol. 2.

660. Abdel-Aty M., Vaughn K., Jovanis P. & Kitamura R. (1993) Understanding Traveler Responses to ATIS, *Proceedings of the 26th ISATA Conference*, Aachen, Germany, 13-17th September, pp. 245-252.

INVITED PAPERS

661. Abdel-Aty M. (2004) Linking Crash Patterns to ITS-Related Archived Data, Sunguide Disseminator, State Traffic Engineering and Operations Newsletter, FDOT, Tallahassee, Florida, December 2004 edition.

662. Abdel-Aty M. and Abdalla F. (2004) A Computer Simulation and Animation Tool to Collect Driver Behavior under Different Types and Levels of Traffic Information/Advice, *Modeling and Simulation Magazine*, Vol. 3 No. 2.

663. Abdelwahab H. and Abdel-Aty M. (2003) Use of the Internet to Enhance Transportation Data Collection, proceedings of the Institute of Transportation Engineers 2003 Annual Meeting and Exhibit, Seattle, Washington, August 2003.

664. Abdel-Aty M. (2002) Calibration of a Florida Nested-logit Mode Choice Model, *Florida Transportation Modeling*, Vol. 19, April 2002.

BOOK CHAPTERS

665. Abdel-Aty, Mohamed, (2021) Macroscopic safety analysis. In: Vickerman, Roger (eds.) International Encyclopedia of Transportation vol 2. pp. 367-379. United Kingdom: Elsevier Ltd.

666. Stylianou K, Dimitriou L and Abdel-Aty M. (2019) Chapter 12 - Big Data and Road Safety: A Comprehensive Review, Mobility Patterns, Big Data and Transport Analytics, (Eds.) Antoniou, C., L., Dimitriou, and F., Pereira, Elsevier, pp. 297-343.
doi:10.1016/b978-0-12-812970-8.00012-9

667. Abdel-Aty M., Shi Q., Pande A., and Yu R. (2018) Chapter 9. Real time traffic operations and safety, In D. Lord and S. Washington (eds.), Safe Mobility: Challenges, Methodology and Solutions, Emerald Group Publishing Limited
Volume 11 - Safe Mobility: Challenges, Methodology and Solutions
ISBN: 978-1-78635-224-8
eISBN: 978-1-78635-223-1

668. Kitamura, R., P.P. Jovanis, M. Abdel-Aty, K.M. Vaughn and P. Reddy (1999) Impacts of pre-trip and en-route information on commuters' travel decisions: Summary of laboratory and survey-based experiments from California. In R. Emmerink and P. Nijkamp (eds.) Behavioural and Network Impacts of Driver Information Systems, *Ashgate Publishing*, Aldershot, pp. 241-267.

EDITED BOOKS

669. Radwan E. and Abdel-Aty M. (2015) Proceedings of the Road Safety and Simulation International Conference, University of Central Florida, ISBN 978-1-4951-7445-2.

NON REFEREED CONFERENCE PROCEEDINGS

670. Lee, J., Abdel-Aty, M., Xu, P., Gong, Y., (2019). Second Thought on Safety-in-Numbers Phenomenon: Counterevidence from an Area with Low Pedestrian Activities. International Symposium on Safety of Vulnerable Road Users, Changsha, March 2019.

671. Rahman, M.H., Abdel-Aty, M., Lee, J., Rahman, S. (2019). Improvement of Traffic Safety at School Zones: Engineering and Operational Countermeasures. International Symposium on Safety of Vulnerable Road Users, Changsha, March 2019.

672. Lee, J., Abdel-Aty, M., Cai, Q., Wu, Y. (2017). Bivariate Ordered Probit Modeling of the Injury Severity Level of Drivers and School-Age Passengers in Traffic Crashes. 2017 American Public Health Association (APHA) Annual Meeting.

673. Park, J., Abdel-Aty, M., Lee, J. (2017). Influence of the School Zone Design Elements on Motorized and Non-motorized Traffic Safety. 2017 American Public Health Association (APHA) Annual Meeting.

674. Cai, Q., Abdel-Aty, M., Wu, Y., Lee, J. (2017). How Did the Hurricane Change Traffic Safety on Interstate Highways? A Case Study of Hurricane Matthew in Florida. 2017 American Public Health Association (APHA) Annual Meeting.

675. Bustamante, C., Abdel-Aty, M., Lee, J., Cai, Q. (2017). Analysis of the Influence of Bicycle Helmet Law (BHL) on Traffic Safety. 2017 American Public Health Association (APHA) Annual Meeting.

676. Lee, J., Abdel-Aty, M., & Park, J. (2017). The Impact of Marijuana Legalization on Traffic Safety in the United States, Joint ITE/CITE 2017 Annual Meeting.

677. Lee, J., Abdel-Aty, M. (2017). Macro-Level Bicycle Safety Analysis. The 22nd International Conference of Hong Kong Society for Transportation Studies.

678. Lee JY and Abdel-Aty M. (2016) Macro-level Investigation of Bicycle Crashes in Florida, Transpo2016, West Palm Beach, Florida, Nov. 13-16, 2016.

679. Chung WB, Abdel-Aty M. and Lee and JY (2016) Possibility of Land-Based Weather Station Data as Real-Time Weather Information through V2I Communications in Florida, Transpo2016, West Palm Beach, Florida, Nov. 13-16, 2016.

680. Bustamante C., Abdel-Aty M. and Lee JY (2016) Effects of the Bicycle Helmet Law on Helmet-Use Behavior, Transpo2016, West Palm Beach, Florida, Nov. 13-16, 2016.

681. Bustamante, C., Lee J., and Abdel-Aty M. (2016). Análisis en Seguridad Vial de la influencia de las Leyes de Sistemas de Retención Infantil y su Efecto en Fatalidades. Caso Aplicado en los Estados Unidos. In *Congreso Iberoamericano de Seguridad Vial*. Santiago de Chile: IVIA, Nov 2016.

682. Wang JH, Lee JY, Park JY, Farid A. and Abdel-Aty M. (2016) Transferability of safety performance functions to estimate crash modification factors: A case study of State-to-State transferability, 14th World Conference on Transport Research, Shanghai, China, July 2016.

683. Lee JY, Abdel-Aty M. and Kuo PF (2016) Analyzing hit-and-run in pedestrian-vehicle collisions, 14th World Conference on Transport Research, Shanghai, China, July 2016.

684. Lee JY, Abdel-Aty M., Choi K. and Huang H. (2016) Macroscopic investigation of pedestrian traffic safety: Focusing on the residence and crash zones, 14th World Conference on Transport Research, Shanghai, China, July 2016.

685. Park JY, Lee JY and Abdel-Aty M. (2016) A study on exploration and assessment of safety effects of roadway features in school zone area, 14th World Conference on Transport Research, Shanghai, China, July 2016.

686. Cai Q., Lee JY and Abdel-Aty M. (2016) Viability of Traffic Analysis Districts (TADs) as a spatial unit for macroscopic crash analysis, 14th World Conference on Transport Research, Shanghai, China, July 2016.

687. Abdel-Aty M., Huang H., Ekram A. and Oloufa A. (2010) Roadway Safety Analysis of Fog Related Crashes and Development of a Visibility Warning System, Proceedings of the 2nd IRF Middle East Regional Congress, Abu Dhabi, Nov. 30, 2010.

688. ElAzzony T., Talaat H. and Abdel-Aty M. (2010) A Microsimulation-based test bed for pre-deployment evaluation of U-turns in Egypt's urban corridors, Accepted for the proceedings of the 19th International Conference on Management of Technology, Cairo, March 2010.

689. Huang H. and Abdel-Aty M. (2009) Traffic crash hotspot identification: State-of-the-art and future directions, 18th International Conference on Management of Technology, Orlando, April 2009.

690. Abdel-Aty M., Haleem K., Cunningham R. and Gayah V. (2009) Application of Variable Speed Limits and Ramp Metering To Improve Safety and Efficiency of Freeways, 2nd International Symposium on Freeway and Tollway Operations, Hawaii, June 2009.

691. Wang X., Cheng W. and Abdel-Aty M. (2009) Intersection Related Crash Identification for Accurate Safety Representation. 35th International Forum on Traffic Records & Highway Safety Information Systems, July 12-16, 2009, Phoenix, AZ.

692. Guo F., Wang X., and Abdel-Aty M. (2008) Safety Analyses of Signalized Intersections Using Hierarchical Bayesian Spatial Models, Joint Statistical Meeting 2008 (JSM 2008, American Statistical Association, The International Biometric Society, the Institute of Mathematical Statistics, and the Statistical Society of Canada), Denver, August 3 - 7, 2008.

693. Abdel-Aty M., Yan X., Radwan E., Wang X. and Chen X. (2007) Exploring Driving Simulator as a Traffic Safety Test Tool at Signalized Intersections, the 7th International Conference of Chinese Transportation Professionals, Shanghai, May 2007.

694. Wang X., Abdel-Aty M. and Chen X. (2007) Safety Analyses at Signalized Intersections: Research Strategies, Modeling Techniques, and Significant Factors, the 7th International Conference of Chinese Transportation Professionals, Shanghai, May 2007.

695. Yan X., Radwan E., Abdel-Aty M., Harb R. and Dos Santos C. (2007) UCF Driving Simulator's Research and Application in Traffic Safety and Operation, the 7th International Conference of Chinese Transportation Professionals, Shanghai, May 2007.

696. Abdel-Aty M., Dos Santos C., Gayah V., Dhindsa A. and Dilmore J. (2006) The Potential of ITS Applications to Reduce Crash Potential on Urban Freeways using Micro-Simulation, Proceedings of the International Symposium of Transport Simulation 2006 (ISTS06), Lausanne, Sep 2006.

697. Abdel-Aty M. (2003) Exploring the Viability of Non-Traditional Injury Severity Modeling Methods, Proceedings of the Canadian Multidisciplinary Road Safety Conference, Banff, Alberta, June 2003.

698. Abdel-Aty M. (2003) A Preliminary Investigation into the Impact of the Increase in Minivans, Light-duty Trucks, and SUVs on Future Traffic Fatality Trends, Proceedings of the Canadian Multidisciplinary Road Safety Conference, Banff, Alberta, June 2003.

699. Abdel-Aty M. and Abdalla F. (2002) Design and Development of a Computer Simulation Tool to Collect Data that Support Hybrid Travel Models Under ATIS, Proceedings of the 4th Transportation Speciality Conference, Canadian Society of Civil Engineers, Montreal, June 2002.

700. Abdel-Aty M. and Abdelwahab H. (2002) Calibration of Nested-Logit Mode-Choice Models for Florida, Proceedings of the 4th Transportation Speciality Conference, Canadian Society of Civil Engineers, Montreal, June 2002.

701. Vitetta B. and Abdel-Aty M. (2000). Using Induced Exposure to Investigate the Effect of Driver Factors in Traffic Safety, Proceedings of the 3rd Transportation Speciality Conference, Canadian Society of Civil Engineers, London.

702. Abdelwahab H. and Abdel-Aty M. (2000). Log-Linear Analysis of the Relationship Between Alcohol Involvement and Driver Characteristics in traffic Crashes, Proceedings of the 3rd Transportation Speciality Conference, Canadian Society of Civil Engineers, London, Ontario.

703. Abdel-Aty M. and As-Saidi A. (1999). Using GIS to Locate High Risk Driver Population, Proceedings of the International Conference "Traffic Safety on Two Continents", Vol. 2, pp.111-126, Malmo, Sweden.

704. Abdel-Aty M. and Radwan E. (1999). Developing Crash Predictive Models for a Principal Arterial, Proceedings of the International Conference "Traffic Safety on Two Continents", Vol. 1, pp. 179-194, Malmo, Sweden.

705. Radwan E., Mostafa H. and Abdel-Aty M. (1998). Traffic Crash modeling on Urban Arterial, Proceedings of the International Conference on Transportation Into the Next Millennium, Singapore.

706. Abdel-Aty M., Chen C. and Radwan E. (1998). Exploring the Relationship Between Drivers Age and Crash Involvement, Proceedings of the 2nd Transportation Speciality Conference, Vol. IVc, Canadian Society of Civil Engineers, Halifax.

707. Mohamed A. and Abdel-Aty M. (1998). Safety Aspects at a Toll Plaza Equipped with Automatic Vehicle Identification Technology, Proceedings of the 2nd Transportation Speciality Conference, Vol. IVc, Canadian Society of Civil Engineers, Halifax.

708. Jovanis P., Abdel-Aty M. and Kowshik R. (1996). Improving the Mobility of the Elderly and Disabled Using Advanced Transportation Technologies, Proceedings of the Rural ITS Conference, Spokane, Washington, Sep. 30 - Oct. 1.

709. Abdel-Aty M., Kitamura R. & Jovanis P. (1995) Impact of ATIS on Route Choice, the *Proceedings of the ASCE Transportation Congress*, Volume I, San Diego, October 22-26. pp. 304-314.

710. Abdel-Aty, M., Jovanis, P., Reddy, P., Vaughn, K. and Kitamura, R. (1995) A New Approach to Route Choice Data Collection: Multi-Phase, CATI Panel Surveys using a GIS Database, Fifth National Conference on Transportation Planning Methods Applications-Volume II: A Compendium of Papers Based on a Conference Held in Seattle, Washington in April 1995.

711. Abdel-Aty M., Kitamura R., Jovanis P., Reddy P & Vaughn K. (1994) Studying Route Choice Behavior Using Computer Aided Telephone Interviews and GIS, In *Computing in Civil Engineering: Proceedings of the First Congress Held in Conjunction with A/E/C Systems 1994*, American Society of Civil Engineers, Washington D.C., June, pp. 1343-1348.

712. Vaughn K., Reddy P., Kitamura R., Jovanis P. & Abdel-Aty M. (1994) Design of a Network and Travel Simulator: A Tool Box for the Analysis of Route Choice Behavior in the Presence of Information, In *Computing in Civil Engineering: Proceedings of the First Congress Held in Conjunction with A/E/C Systems 1994*, American Society of Civil Engineers, Washington D.C., June, pp. 1743-1750.

713. Vaughn K., Abdel-Aty M., Kitamura R. & Jovanis P. (1993) Analysis of Sequential Route Choice Under ATIS, In L.F. Cohn (ed.), the *Proceedings of the Fifth International Conference on Computing in Civil Engineering*, ASCE, Anaheim, CA, June 7-9, pp. 825-832.

CITATIONS

Google Scholar in Oct. 2021 produced the following:

Citations: 22,250

h-Index: 81

i10-index: 286

Science Direct

Papers downloaded: 376,000 times

Scopus

Citations: 13150

H-Index: 65

Newsflo

Media mentions: 45

BEST PAPERS AWARDS

1. Chung, W., Abdel-Aty, M., Park, H.C., Cai, Q., Rahman, M., Gong, Y. and Ponnaluri, R., 2020. Development of decision support system for integrated active traffic management systems considering travel time reliability. *Transportation research record*, 2674(2), pp.167-180.

2020 Best paper, TRB Regional Transportation Systems Management and Operations Committee

2. Lee JY, Abdel-Aty M., Cai Q and Wang L (2018) Analysis of Fatal Traffic Crash-Reporting and Reporting-Arrival Time Intervals of Emergency Medical Services, *Journal of the Transportation Research Board*, 2672(32), 61-71.

2018 Best paper, TRB Transportation Safety Management Committee

3. Park JY and Abdel-Aty M (2017) Safety Performance of Combinations of Traffic and Roadway Cross Sectional Design Elements at Straight and Curved Segments, *ASCE Journal of Transportation Engineering, Part A: Systems*, Volume 143, Issue 6: 04017015.

ASCE Journal of Transportation Engineering, Part A: Systems, best paper for calendar year 2017.

4. Wang L., Abdel-Aty M. and Lee JY (2017) Implementation of Active Traffic Management Strategies for Safety of a Congested Expressway Weaving Segment, *Journal of the Transportation Research Board* No. 2635.

2017 Best paper, TRB Transportation Safety Management Committee

5. Yasmin S., Eluru N., Lee JY. and Abdel-Aty M. (2016) An Ordered Fractional Split Approach for Aggregate Injury Severity Modeling, *Journal of the Transportation Research Board*, No. 2583, pp. 119-126.

2016 Best Paper Award from the Transportation Research Board (TRB) Committee on Statistical Methods (ABJ80)

6. Wang L., Abdel-Aty M., Lee JY and Shi Q. (2016) Analysis of Real-time Crash Risk and Crash Frequency for Expressway Ramps Using Traffic, Geometric, Land-use, and Trip Generation Predictors, 14th World Conference on Transport Research, Shanghai, China, July 2016.

WCTR group A Best Paper Award

7. Park J., Abdel-Aty M. and Lee C. (2015) A Study on Development and Comparison of Crash Modification Factors for Combining Multiple Treatments on Rural Multilane Roadways, 93rd Annual Meeting of the *Transportation Research Board*, TRB No. 15-1038, Washington DC, January 2015.

2015 Best paper, TRB Safety Performance Committee

8. Ahmed M., Abdel-Aty M._and Yu R. (2012) A Bayesian Updating Approach for Real-time Safety Evaluation Using AVI Data, *Journal of the Transportation Research Board*, Vol. 2280, pp. 60-67.

2012 Best paper, TRB Safety Data, Analysis and Evaluation Committee

9. Pande A. and Abdel-Aty M. (2006) A Comprehensive Analysis of the Relationship between

Real-time Traffic Surveillance data and Rear-end Crashes on Freeways, *Journal of the Transportation Research Board*, No. 1953, pp. 31-40.

2006 Best paper, TRB Safety Data, Analysis and Evaluation Committee

10. Yu R., Abdel-Aty M. and Ahmed M. (2013) Bayesian Random Effect Models Incorporating Real-time Weather and Traffic Data to Investigate Mountainous Freeway Hazardous Factors, *Accident Analysis & Prevention*, Vol. 50, pp.371-376. 5year IF:3.2.
One of the most highly cited papers during 2014, 2015 and up until June 2016 (Elsevier)
11. Lee JY, Abdel-Aty M. and Jiang X. (2015) Multivariate Crash Modeling for Motor Vehicle and Non-Motorized Modes at the macroscopic Level, *Accident Analysis & Prevention*, Vol. Volume 78, May 2015, Pages 146-154. 5year IF:3.5.
Among the 25 most cited articles since 2015.
12. Cai Q., Abdel-Aty M., Lee JY and Eluru N. (2017) Comparative Analysis of Zonal Systems for Macro-level Crash Modeling, *Journal of Safety Research*, Vol 61, pp 157-166.
3rd most Cited paper in JSR since 2017
13. Lee JY, Abdel-Aty M. and Cai Q. (2017) Intersection Crash Prediction Modeling with Macro-Level Data from Various Geographical Units, *Accident Analysis and Prevention*, Vol 102, pp. 213-226.
Top Cited papers in AAP since 2017

Prominence percentile: 99.211 (Prominence is an indicator that shows the current momentum of a Topic. It is calculated by weighing 3 metrics for papers clustered in a Topic: Citation count, Scopus views and Average CiteScore).

14. Zeng Q., Wen H., Huang H. and Abdel-Aty M. (2017) A Bayesian spatial random parameters Tobit model for analyzing crash rates on roadway segments, *Accident Analysis & Prevention*, Vol. 100, pp. 37-43.

Top Cited papers in AAP since 2017, Prominence percentile: 99.211

15. Rahman S. and Abdel-Aty M. (2018) Longitudinal Safety Evaluation of Connected Vehicles' Platooning on Expressways, *Accident Analysis and Prevention*, [Volume 117](#), August 2018, Pages 381-391.

Top Cited papers in AAP since 2018, Prominence percentile: 99.086

16. Wu Y., Abdel-Aty M. and Lee JY (2018) Crash Risk Analysis during Fog Conditions using Real-Time Traffic Data, Special Issue RS5C, *Accident Analysis and Prevention*, Volume 114, May 2018, Pages 4-11

Top Cited papers in AAP since 2018, Prominence percentile: 77.452

17. Cai Q., Abdel-Aty M., Lee JY, Wang L. and Wang XS. (2018) Developing a Grouped Random Parameters Multivariate Spatial Model to Explore Zonal Effects for Segment and Intersection Crash Modeling, Journal: *Analytic Methods in Accident Research*, [Volume 19](#), September 2018, Pages 1–15

Top Cited papers in AMAR since 2018

18. Fountas, G., Anastasopoulos, P., Abdel-Aty, M. (2018) Analysis of accident injury-severities using a correlated random parameters ordered probit approach with time variant covariates. *Analytic Methods in Accident Research*, 18, 57-68.

17th (tied) most Cited Article since 2016, in Analytic Methods in Accident Research. As of January/February 2019, this highly cited paper received enough citations to place it in the top 1% of its academic field based on a highly cited threshold for the field and publication year. Data from Essential Science IndicatorsSM - Web of Science.

19. Rahman S., Abdel-Aty M., Wang L. and Lee J. (2018) Understanding the Highway Safety Benefits of Different Approaches of Connected Vehicles in Reduced Visibility Conditions, *Journal of the Transportation Research Board*, 2672(19), pp. 91-101
 Based on a message from Patti Lockhart, Managing Editor, Transportation Research Record Transportation Research Board, The National Academies of Sciences, Engineering, and Medicine: "I am delighted to inform you that your article, 'Understanding the Highway Safety Benefits of Different Approaches of Connected Vehicles in Reduced Visibility Conditions', was one of the 5 most highly cited papers in the TRR in 2019. These citations contributed to the single largest increase in Impact Factor in the history of our journal. Congratulations, and thank you for publishing with us!"

20. Mannerling F., Shankar V., Bhat C., Abdel-Aty M. (2020) Big Data, Traditional Data and the Tradeoffs between Prediction and Causality in Highway-Safety Analysis, *Analytic Methods in Accident Research*, 25, 100113. doi:10.1016/j.amar.2020.100113

Most Cited Articles

The most cited articles from *Analytic Methods in Accident Research* published since 2018, extracted from Scopus.

Currently on AAP website, 4 out of 25 best cited papers

Studies showed that Dr. Aty is:

- Publons, Web-of Science, top 0.1% cited authors globally, 2020.
- Ranked by Microsoft Academic as the world 2nd most impactful author in Transport Engineering in 2020
<https://academic.microsoft.com/topic/22212356/authors?pi=1>
- Top 50 most Cited Civil Engineers in the US and Top 150 worldwide, Elsevier and Shanghai University
- Ranked No. 17 in the field of logistics and transportation out of more than 21,000 researchers. Journal *PLOS Biology*, used a composite indicator based on six citation metrics to rank the scientists from a variety of disciplines and subdisciplines, 2020.
- Top author in Highway Accidents and Accident Prevention, Scopus, last 5 years
- Top author in Traffic Safety, Web of Science, last 5, 10 and 15 years
- UCF/Dr. Aty top university in the US in Safety publications and among top 10 in the world, Study by the University of Southern Australia and Monash University