

Curriculum Vitae

Essam Dabbour, B.Sc., M.A.Sc., Ph.D., P.Eng.

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PRACTICE AREAS

Road Design & Traffic Safety

- Road Design Factors:
- Intersection Design
- Sight Line Visibility
- Curve & Crest Design
- Road Signage
- Passing Lane Design
- Barrier Design
- Shoulder Design & Right-of-Way Design
- Sidewalk Design & Drainage
- Nighttime Road Illumination
- Rail Crossings
- Road Construction
- Traffic Safety Factors:
- Pedestrian Crossings
- Bicycle Facilities
- Traffic Signal Timing
- Transit Design
- Traffic Capacity
- Speed Studies
- Collision Reduction Factors
- Road Safety Audits
- Winter Maintenance Assessment

ACADEMIC BACKGROUND

Doctorate Degree in Civil Engineering, Ryerson University, 2009

- Graduate courses in Traffic Safety, Transit Planning & Design, Pavement Design

Masters Degree in Civil Engineering, Ryerson University, 2003

- Masters courses in Highway Design, Traffic Operations

Bachelors Degree in Civil Engineering, Alexandria University, Egypt, 1988

- Undergraduate courses in Road Surveying, Road Design, Concrete Design, Structural Analysis, Physics, Railway Design



EMPLOYMENT HISTORY

Advantage Forensics Inc., Toronto

Senior Engineer, July 2019 to present

Lead investigator on road design & traffic safety cases

Ryerson University, Dept. of Civil Engineering, Toronto

Adjunct Professor, Sept. 2014 to present

Instructor of highway road design course

Supervise graduate research in road design & traffic safety

Abu Dhabi University, Dept. of Civil Engineering, Abu Dhabi, UAE

Associate Professor, Aug. 2009 to 2019

Instructor of road design, traffic engineering, transportation engineering, surveying & engineering ethics courses

Supervise graduate & undergraduate research in road design & traffic safety

Ryerson University, Dept. of Civil Engineering, Toronto

Ph.D. Candidate Researcher, June 2006 to June 2009

Conduct research in road design & traffic safety

Part-time course instructor for highway design course

Tutorial assistant for courses in road design, pavement design, transportation engineering & traffic safety

Giffels Associates (now IBI Group), Toronto

Transportation Engineer, 2003 to 2008

Consultant on road design, transportation & traffic safety projects, including 400-series freeways & OPG

ARCON Construction, Alexandria, Egypt

Project Manager, 1996 to 2000

Consultant on design & analysis of road design, transportation & traffic safety projects

Modern Contracting Co., Alexandria, Egypt

Project Engineer, 1988 to 1996

Designed road infrastructure, transportation & traffic safety projects



PROFESSIONAL SOCIETIES & APPOINTMENTS

- Professional Engineers Ontario, P.Eng. since 2002
- Member, Canadian Society for Civil Engineering (CSCE)
- Member, Institute of Transportation Engineers (ITE)
- Member, American Society of Civil Engineers (ASCE)
- ABET/ASCE Program Evaluator for accreditation of Civil Engineering university programs
- Chairman, Middle East Traffic Infrastructure Summit International Conference, Dubai, Nov. 2016
- Scientific technical paper reviewer for the following Journals:
 - Journal of Transportation Engineering
 - Journal of Traffic and Transportation Engineering
 - Journal of Surveying Engineering
 - Accident Analysis & Prevention
 - Canadian Journal of Civil Engineering
 - IET Intelligent Transportation Systems
- Scientific Committee Member, AIIT International Congress on Transport Infrastructure & Systems, Rome, 2019
- Scientific Committee Member, AIIT International Conference on Transport Infrastructure & Systems, Rome, 2017
- Scientific Committee Member, AIIT International Conference on Traffic & Transport Engineering, Belgrade, 2016
- Organizing Committee Member, CIB International Conference, Abu Dhabi, 2014
- Judging Committee Member, Think Science National Competition, UAE, 2018
- Award Jury Committee Member, Dubai Award for Sustainable Transport, Dubai, 2016 & 2017

PROFESSIONAL AWARDS

- Outstanding Reviewer Award, American Society of Civil Engineers, 2017
- Research Fellow Award, Abu Dhabi University, 2017
- Outstanding Teaching Award, Abu Dhabi University, 2015
- Outstanding Research Award, Abu Dhabi University, 2014
- Distinguished Service Award, Abu Dhabi University, 2013
- Certificate of Appreciation Award, Roads & Transport Authority, Dubai, UAE, 2013
- Certificate of Excellence Award, Abu Dhabi University, 2012
- Outstanding Research Award, Abu Dhabi University, 2010
- Innovation Challenge Award, Ryerson University, 2009
- Arthur M. Wellington Prize, American Society of Civil Engineers, 2005

MEDIA APPEARANCES

- “On the straight and narrow: Road layout changes suggested for safer driving in UAE”, The National newspaper, UAE, Mar. 2015
- “Road map to eliminate road horror”, Al Watan newspaper, UAE, Mar. 2013



RECENT PROFESSIONAL DEVELOPMENT ACTIVITIES

- Attended a webinar provided by the Canadian Association of Road Safety Professionals (CARSP) with the title “An innovative approach to assessing the relative risk at rural curved-tangential intersections”. The webinar was held on June 25, 2020.
- Attended a webinar provided by the Canadian Association of Road Safety Professionals (CARSP) with the title “Measuring road safety improvements using video-based conflict analysis in Prince George, BC”. The webinar was held on June 25, 2020.
- Attended a webinar provided by the Canadian Association of Road Safety Professionals (CARSP) with the title “Applying human factors principles to rural intersection safety”. The webinar was held on June 25, 2020.
- Attended a webinar provided by the Canadian Association of Road Safety Professionals (CARSP) with the title “Driver checking failures towards pedestrians and cyclists: an on-road study”. The webinar was held on June 10, 2020.
- Attended a webinar provided by the Transportation Research Board (TRB) with the title “Traffic trends and safety in a COVID-19 world”. The webinar was held on June 2, 2020.
- Attended a webinar provided by the Transportation Association of Canada (TAC) with the title “Lesson’s learned from using driving simulators to improve driver behavior: what’s next?”. The webinar was held on March 11, 2020.
- Attended an in-house webinar with the title “Forensic engineering outlook of failure analysis in product and mechanical systems”. The webinar was held on June 18, 2020.
- Attended an in-house webinar with the title “Looming thresholds in analyzing traffic accidents”. The webinar was held on June 16, 2020.
- Attended an in-house webinar with the title “Understanding forensic human factors through case study analysis”. The webinar was held on April 8, 2020.
- Provided an in-house webinar with the title “Identifying road design issues related to traffic accidents”. The webinar was held on June 18, 2020.



PUBLISHED PAPERS & BOOK CHAPTERS

- Dabbour, E. (2020). "Motivating engineering students by providing two mid-term exams and dropping the lower mark". *Journal of Civil Engineering Education* [in press].
- Dabbour, E., Dabbour, O., and Martinez, A. A. (2020). "Temporal stability of the factors related to the severity of drivers' injuries in rear-end collisions". *Accident Analysis & Prevention*, 142: 105562.
- Dabbour, E., Haider, M., Easa, S., and Philip, T. (2019). "Investigating temporal stability of risk externalities in traffic collisions". *Journal of Transportation Safety & Security*.
- Dabbour, E., Haider, M., and Diaa, E. (2019). "Using random- parameter and fixed-parameter ordered models to explore temporal stability in factors affecting drivers' injury severity in single vehicle collisions". *Journal of Traffic & Transportation Engineering*, 6(2): 132 – 146.
- Dabbour, E., Awadhi, M.A., Aljarah, M., Mansoura, M., and Haider, M. (2018). "Evaluating Safety Effectiveness of Roundabouts in Abu Dhabi". *International Association of Traffic and Safety Sciences Research*.
- Almoarawi, M. and Dabbour, E. (2018). "Predicting operating speeds at urban multi-lane roundabouts in Abu Dhabi, United Arab Emirates". *Journal of Advanced Transportation*, Vol. 2018.
- Dabbour, E., Easa, S. and Haider, M. (2017). "Using fixed-parameter and random-parameter ordered regression models to identify significant factors that affect the severity of drivers' injuries in vehicle-train collisions". *Accident Analysis & Prevention*, 107: 20 – 30.
- Dabbour, E. (2017). "Analyzing temporal trends of the factors that increase the risk of rollover in single-vehicle collisions". *Journal of Transportation Safety & Security*.
- Dabbour, E. (2017). "Investigating temporal trends in the explanatory variables related to the severity of drivers' injuries in single vehicle collisions". *Journal of Traffic & Transportation Engineering*, 4(1): 71 – 79.
- Dabbour, E. (2017). "Risk factors that increased accident severity at US railroad crossings from 2005 to 2015". In *Transportation Infrastructure & Systems: Proceedings of the AIIT International Congress on Transport Infrastructure & Systems (Rome, Italy, 10-12 April 2017)*. ISBN 978-1-1380-3009-1. CRC Press, Taylor & Francis Group, USA.
- Dabbour, E. and Easa, S. (2016). "Sight-distance requirements for left-turning vehicles at two-way stop-controlled intersections". *Journal of Transportation Engineering*.
- Dabbour, E. (2016). "Assessing the effects of implementing an online student response system in a transportation engineering course". *Journal of Professional Issues in Engineering Education and Practice*.
- Easa, S., Qu, X., and Dabbour, E. (2016). "Improved Pedestrian Sight Distance Needs at Railroad-Highway Grade Crossings". *Journal of Transportation Engineering*.
- Dabbour, E. (2015). "Quantifying the effects of using online student response system in an engineering ethics course". *Journal of Professional Issues in Engineering Education and Practice*, 142(2).
- Dabbour, E. (2015). "Design gap acceptance for right-turning vehicles based on vehicle acceleration capabilities". *Transportation Research Record: Journal of the Transportation Research Board*, 2521: 12–20.
- Dabbour, E. and Easa, S. (2014). "Proposed Collision Warning System for Right-Turning Vehicles at Two-way Stop-controlled Rural Intersections". *Transportation Research Part C: Emerging Technologies*, 42: 121 – 131.
- Dabbour, E. (2013). "Optimizing highway profiles for individual cost items". *International Journal for Traffic and Transport Engineering*, 3(4): 440 – 447.
- Dabbour, E. (2012). "Using Logistic Regression to Identify Risk Factors Causing Rollover Collisions". *International Journal for Traffic and Transport Engineering*, 2(4): 372 – 379.
- Dabbour, E., Easa, S., and Hossain, A. (2012). "Statistical models to measure driver behaviour in response to an intersection collision warning system". In *Driver Behaviour and Training: Volume V*. ISBN 978-1-4094-4304-9. Ashgate Publishing Ltd, England.
- Dabbour, E. and Easa, S. (2010). "Technology-Independent Algorithm for Collision Warning System at Semi-Controlled Intersections". *Canadian Journal of Transportation*, Vol. 3(1), 2010, 45-68.



- Easa, S., Reed, M., Russo, F., Dabbour, E., Mehmood, E., and Curtis, K. (2010). "Effect of increasing road light luminance on night driving performance of older adults". *International Journal of Applied Science, Engineering and Technology*. Vol. 6(1), 2010, 41-48.
- Dabbour, E. and Easa, S. (2009). "Perceptual Framework for a Modern Left-Turn Collision Warning System". *International Journal of Applied Science, Engineering and Technology*. Vol. 5:1, 8 – 14.
- Dabbour, E. and Easa, S. (2008). "Evaluation of safety and operational impacts of bicycle bypass lanes at modern roundabouts". *Canadian Journal of Civil Engineering*. Vol. 35:10, 1025 – 1032.
- Easa, S. and Dabbour, E. (2005). "Establishing Design Guidelines for Compound Horizontal Curves on Three-Dimensional Alignments", *Canadian Journal of Civil Engineering*. Vol. 32:4, 615 – 626.
- Easa, S., Ali, M., and Dabbour E. (2005). "Design Aids for Offsetting Opposing Left-Turn Lanes for Intersections on Horizontal Curves". *ASCE Journal of Transportation Engineering*. Vol. 131, 835-842.
- Dabbour, E. and Easa, S. (2004). "Radius Requirements for Reverse Horizontal Curves on 3D Alignments". *ASCE Journal of Transportation Engineering*. Vol. 130, 610-620.
- Easa, S., Dabbour, E., and Ali, M. (2004). "Three-Dimensional Model for Stop-Control Intersection Sight Distance". *ASCE Journal of Transportation Engineering*, Vol. 130, 261-270.
- Easa, S. and Dabbour, E. (2003). "Need for Revising Minimum Radius Requirements On Three-Dimensional Highway Alignments", *Canadian Journal of Civil Engineering*, Vol. 30:6, 1022 – 1033.
- Khan, N. and Dabbour, E. (2018). "Proposed pavement markings to reduce right-turning vehicular crashes". *Proceedings of Road Safety on Five Continents Conference*, South Korea, May 2018.
- Easa, S., Dabbour, E., Gruchalla-Wesierski, A., and Qu, X. (2018). "Pedestrian Sight Distance Needs at Railroad Crossings: Integrating Train Stopping Requirements". *Proceedings of the Fourth International Conference on Railway Technology*, Barcelona, Sept. 2018.
- Aly, A. and Dabbour, E. (2018). "Using Ordered Modeling to Identify the Most Significant Factors That Increase the Severity of Single Vehicle Collisions". *Proceedings of the Canadian Association of Road Safety Professionals Annual Conference*, Victoria, June 2018.
- Philip, T., Dabbour, E., and Easa, S. (2018). "Investigating the risks imposed by different driver groups on other road users". *Proceedings of the Canadian Society for Civil Engineering Annual Conference*, Fredericton, June 2018.
- Almoarawi, M. and Dabbour, E. (2018). "Developing and validating regression models to predict operating speeds for roundabouts in Abu Dhabi". *Proceedings of the Canadian Society for Civil Engineering Annual Conference*, Fredericton, June 2018.
- Bridgwater, S., Dabbour, E., and Haider, M. (2018). "Identifying the factors that increase the severity of pedestrians' injuries when struck by vehicles". *Proceedings of the Canadian Society for Civil Engineering Annual Conference*, Fredericton, June 2018.
- Dabbour, E., Hossam, E., Ally, N., Elshennawy, A., and Falaknaz, H. (2018). "Enhanced model for calculating the required lengths of acceleration lanes at freeway interchanges". *Proceedings of the Canadian Society for Civil Engineering Annual Conference*, Fredericton, June 2018.
- Tabaza, H., Dabbour, E., and Ghazal, M. (2017). "NFC-based mobile-guided parking system in indoor environments". *Proceedings of the 5th International Road Federation Middle East Regional Congress & Exhibition*, Dubai, Oct. 2017.
- Kunnah, H., and Dabbour, E., (2017). "An Optimization Model for Minimizing the Cost of Constructing Highway Vertical Alignments". *Proceedings of the 5th International Road Federation Middle East Regional Congress & Exhibition*, Dubai, Oct. 2017.
- Dabbour, E. (2015). "Design gap acceptance for right-turning vehicles based on vehicle acceleration capabilities". *94th Annual Meeting of the Transportation Research Board*, Washington D.C., Jan. 2015.
- Dabbour, E. (2012). "Identifying Risk Factors Leading to Single-vehicle Rollover Collisions". *International Conference on Civil Engineering Research*, Surabaya, Indonesia, Oct. 2012.



- Dabbour, E., Easa, S., and Hossain, A. (2011). "Statistical models to measure drivers' perception-reaction times and acceleration rates when responding to collision warning systems". *International Conference on Driver Behaviour and Training*, Paris, Nov. 2011.
- Dabbour, E. (2010). "Simulating an Intersection Collision Warning System Using Matlab". *Proceedings of the 7th International Conference on Engineering Computational Technology*, Valencia, Sept. 2010.
- Dabbour, E., Easa, S., and Hossain, K. (2010). "Implementing Human Factors into Intersection Collision Warning Systems". *Proceedings of the 8th International Transportation Specialty Conference*, Winnipeg, June 2010.
- Dabbour, E. and Easa, S. (2008). "Proposed Collision Warning System for Left-Turning Vehicles at Intersections". *Proceedings of the 36th annual conference, Canadian Society for Civil Engineering*, Quebec City, June 2008.
- Dabbour, E. and Easa, S. (2008). "New Collision Warning System for Turning Vehicles at TWSC Intersections". *Proceedings of the 10th International Conference on Application of Advanced Technologies in Transportation*. Athens, May 2008.
- Dabbour, E. and Easa, S. (2006). "Proposed Geometric Features to Improve Safety of Modern Roundabouts". *Proceedings of the Transportation Research Board 85th Annual Meeting*, Washington, D.C., Jan. 2006.
- Dabbour, E., Easa, S., and Abd-El-Halim, A.O. (2003). "Design Guidelines For Horizontal Reverse Curves Combined With Vertical Alignments". *Proceedings of the 31st Annual Conference, Canadian Society for Civil Engineering*, Moncton, June 2003.
- Dabbour, E., Easa, S., and Raahemifar, K. (2002). "Optimum Vertical Curves for Highway Profiles Using Nonlinear Optimization". *Proceedings of the 4th Annual Transportation Conference, Canadian Society for Civil Engineering*, Montreal, June 2002.
- Dabbour, E., Easa, S., Hassan, Y., and Halim, A.O. (2002). "Analytical Model for 3-D Intersection Sight Distance". *Proceedings of the 4th Annual Transportation Conference, Canadian Society for Civil Engineering*, Montreal, June 2002.