



Tom Flynn

MSc PEng

Project Engineer

contact

✉ tom.flynn@meaforensic.com

📞 905.595.8593

📍 Toronto

expertise

Collision Reconstruction

areas of specialization

Collision reconstruction

"Black box" crash data records

Seat belt investigation

Slips, trips, and falls

Mr. Thomas Flynn is a project engineer and a member of MEA Forensic's Collision Reconstruction group. He has conducted close to 300 technical investigations of accidents involving pedestrians, bicycles, and motor vehicles including heavy-trucks, ATVs, and snowmobiles. Collision severity, occupant movement, seat belt use and effectiveness, vehicle speed, pre-collision dynamics, and causes of mechanical failure are typical areas of focus for him. Tom has been registered as a professional engineer in Ontario since 2015.

Tom holds Bachelor's and Master's degrees in Engineering and Rehabilitation Science from Queen's University; his Master's degree involved building a computational model of forces and moments in the lower limbs. His background in engineering, mathematics, and modeling help him interpret traditional crash evidence like vehicle damage and tire marks on the road. Increasingly, crash investigations involve a new kind of evidence: event data downloaded from cars. Tom is involved in MEA's research into the accuracy and limitations of this black box data and has also been trained in how to download and analyze data from heavy trucks and buses.

Advanced driver-assistance systems (ADAS) like auto-braking, lane keeping and adaptive cruise control will change the way engineers approach accident investigations. Tom has published peer-reviewed studies on auto-braking. "ADAS are becoming more and more common. They change some of our fundamental assumptions, and will generate new questions about who is responsible for a crash."

education

Masters of Science, Rehabilitation Science, Queen's University, Kingston, ON, 2010-2012.

Bachelor of Science Engineering, Mathematics and Engineering, Queen's University, Kingston, ON, 2004-2008.

professional status

Professional Engineer, Professional Engineers Ontario, since 2015.

professional experience

MEA Forensic engineers & Scientists

Project Engineer, 2012 to present

Assists with technical investigations of motor vehicle accidents including determining collision severity, collision sequence, occupant kinematics, seatbelt use and effectiveness, vehicle speed and causes of mechanical failure.

Human Performance Laboratory, Queen's University, Kingston, ON

Research Assistant, 2010 to 2012

Developed, coded, and tested software for measuring neck strength in a paediatric population to study the effects of muscle strengthening programs. Processed the results of several subjects for analysis and future publication.

School of Rehabilitation Therapy, Queen's University, Kingston, ON

Teaching Assistant, 2011 to 2012

Lectured on the topic of Ergonomics and Biomechanical Analysis to physiotherapy and occupational therapy graduate students.

Vorum Research Corporation, Vancouver, BC

Biomedical Product Support Engineer, 2008 to 2010

Provided remote and on-site product support for medical device manufacturing hardware and software. Performed quality control on existing products and conducted research into novel methods, materials, and equipment.

Self-Employed

Software Engineer, 2008 to 2010

Developed patient-tracking and statistical analysis software for Canadian fertility clinics.

Digital Ergonomics & Shoulder Evaluation Laboratory, University of Waterloo, ON

Research Assistant, 2006 to 2008

Created a graphical user interface for providing an ergonomic and biomechanical assessment of manual tasks in the workplace. Optimized existing code for ease of use and computational efficiency.

awards

NSERC CREATE Scholarship for Bone & Joint Health Technology, \$32,000.

publications

The Effect of Target Features on Toyota's Autonomous Emergency Braking System

The Accuracy of Toyota Vehicle Control History Data during Autonomous Emergency Braking

Comparison of the Accuracy and Sensitivity of Generation 1, 2 and 3 Toyota Event Data Recorders in Low-Speed Collisions

lectures & presentations

June 2012 –Development and Implementation of an Optimization-Based Modeling of Weight-Bearing Loads on the Knee Joint in Paediatrics. Canadian Medical and Biological Engineering Conference, Halifax, NS.

July 2011 – Computational Modeling of the Weight-Bearing Joint Contact Forces at the Knee, Canadian Physiotherapy Association Congress, Whistler, BC.

March 2011 – An Optimization Based Kinetic Lower Limb Model and its Application to Understanding the Development of Articular Knee Cartilage, Queen’s University School of Rehabilitation Therapy Seminar Series, Kingston, ON.

training and professional development

June 26-27, 2019 – Forensic Video Analysis Workflow Training, iINPUT-ACE, Toronto, ON.

May 28-31, 2019 – Motorcycle Collision Reconstruction, York Regional Police, East Gwillimbury, ON.

May 21-23, 2018 – SAE Applied Vehicle Dynamics Course, Greer, SC.

November 10, 2017 – ADAS Application: Automatic Emergency Braking, Troy, MI.

November 8-9, 2017 – Introduction to Highly Automated Vehicles, Troy, MI.

October 13-16, 2015 – Access and Interpreting Heavy Vehicle Event Data Recorders, Oxnard, CA.

September 13-17, 2015 – Advanced Crash Reconstruction Utilizing Human Factors Research, Phoenix, AZ.

July 6, 2015 – Building Code Overview, Ontario Society of Professional Engineers, Mississauga, ON.

February 4, 2015 – Forensic Infotainment Analysis, NYSTARS, Yorktown Heights, NY.

April 8-10, 2014 – Society of Automotive Engineers World Congress, Detroit, MI.

April 7-8, 2014 – Introduction to Brake Control Systems: ABS, TCS, and ESC, Detroit, MI.

June 2013 – CDR Systems Operators and CDR Analysis and Applications Course, Winnipeg, MB.

May 2013 – PC-Crash Animations II Online Workshop

May 2013 – PC-Crash Animations I Online Workshop

November 2012 – PC-Crash Expert Online Workshop

November 2012 – PC-Crash Essentials Online Workshop