

# WATMOVES

UW-ITE STUDENT CHAPTER NEWSLETTER

Issue No. 6 Fall Term 2013

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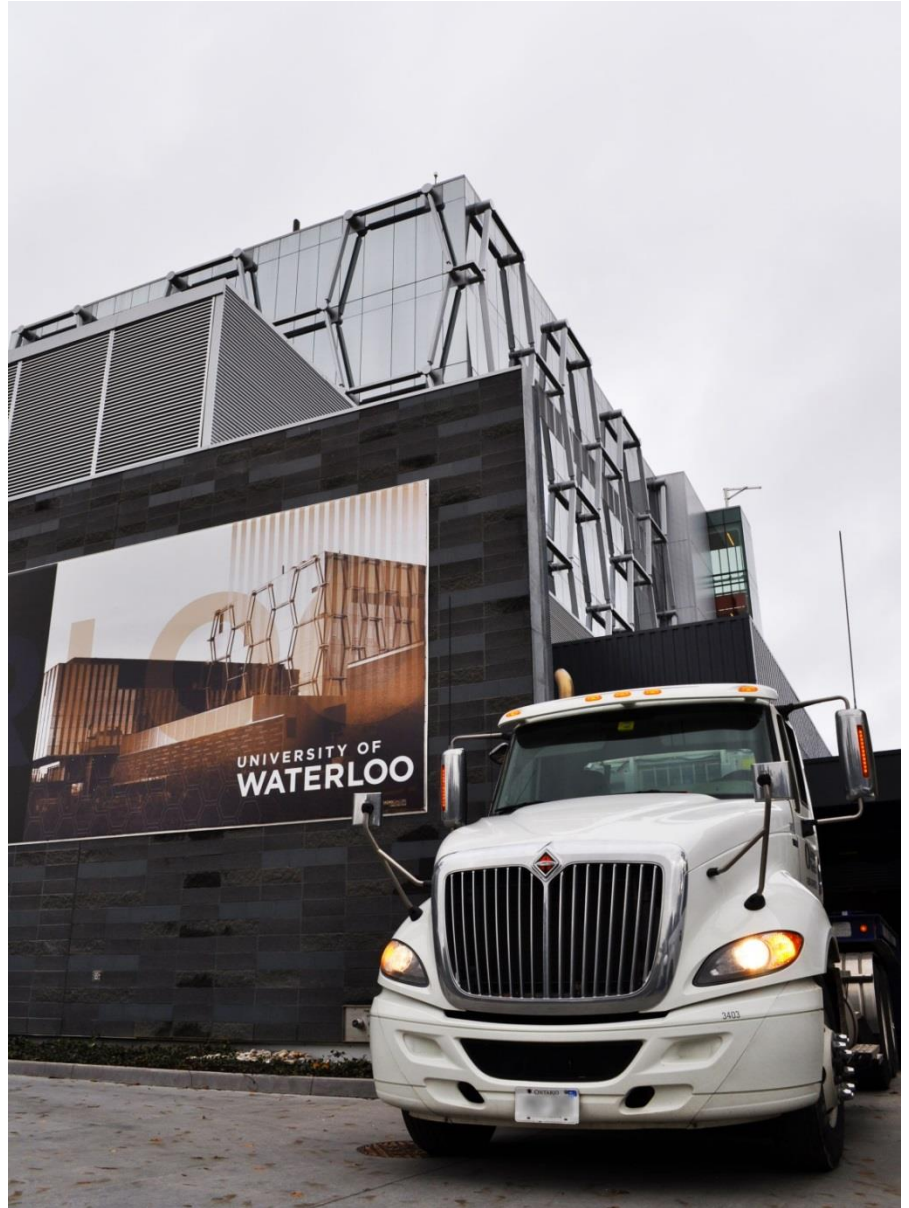
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## Message from the President

First things first, once again welcome to the WatMoves, the University of Waterloo ITE Student Chapter Newsletter for the fall term, and happy New Year!! As we begin this New Year I am sure that 2014 will be a year with lots of bigger and better things for the chapter.

Fall term was a great season for the chapter and our members started the new academic year with different activities organized by the executive committee with the efforts and the support that each of them put in running this chapter.

This issue presents the chapter's activities during the last academic term including organized seminars and webinars presented by individuals from different universities; as well as social activities such as the welcoming event for the new transportation students and the Christmas luncheon.

As always, we would like to invite interested professionals and intellectuals to come to the University of Waterloo and to present their projects and research. We believe that the exchange of ideas is a key factor that results in innovations and bigger ideas.

Here, I would like to take this opportunity and thank each of the individuals and the authors of different sections who made the release of this issue happen and the executive members who help in running this student chapter. The following is the list of 2013-2014 executive board members:

- President: **Ehsan Bagheri**
- Vice President: **Tae J. Kwon**
- Secretary: **Kevin Yeung**
- Academic Event Director: **Sahar Tolami**
- Social Event Director: **Shahin Karimi**
- Webmaster: **Amir Zarinbal**
- Treasurer: **Lalita Thakali**



At the end I would like to thank the UW transportation faculty members for their support and help. I would also like to recognize our chapter advisor Professor Bruce Hellinga. I hope each of you will enjoy reading this issue.

*Ehsan Bagheri, PhD Candidate  
Chapter President*

## Academic Events



COMPASS OPERATION ROOM AT MTO

Fall term was a great academic season for the UW-ITE Student Chapter. During this term the student chapter hosted academic seminars, broadcasted webinars, and organized a field trip to the MTO head office at Downsview.

### Webinars

On September 6, 2013, UW-ITE broadcasted a webinar entitled "Stochastic Modeling of Traffic Flow Breakdown Phenomenon: Application to Predicting Travel Time Reliability." The webinar was presented by Dr. Jing Dong from Iowa State University.

The second webinar was on September 11, 2013 on the topic of "Advanced Public Transit Systems (APTS) Open Data" which was organized by ITS Canada.

### Seminars

On September 12th, Dr. Joseph Chow, a Professor from Ryerson University, shared his research on the advancement of transportation network models. His presentation titled "What can we do with an instrumented city? Adaptation and user-awareness in urban transport service network design" pointed out the importance of human factors in transportation design.



APTS Open Data Webinar



Our next presenter was Dr. Laurence R. Rilett, a distinguished Professor of Civil Engineering at the University of Nebraska-Lincoln. He is also a proud alumnus of the University of Waterloo. On his visit, on October 8, he talked about "Evaluation of Nebraska Department of Road's Active Advance Warning System." This seminar was also broadcasted in the form of a webinar by the UW-ITE student chapter.

Field Visit

On October 17, 2013, the UW-ITE student chapter visited MTO's head office to gain

insight on behind-the-scene operations of the COMPASS system. The tour covered various topics from COMPASS operation details to the City of Toronto's evacuation procedure. We would like to thank Mr. Spadafora for the tour.



Steven Spadafora in action! Mr. Spadafora was kind enough to give UW-ITE student chapter the COMPASS tour on October 17, 2013.



UW-ITE Seminar - Dr. Joseph Chow

## Social Events



NEW TRANSPORTATION GRAD STUDENTS WELCOME EVENT

UW-ITE student chapter hosted two social events in fall 2013 term; ITE's New Transportation Grad Students Welcome event and 2013 Christmas Luncheon event.

### New Transportation Grad Students Welcome event

The UW-ITE Student Chapter was pleased to welcome new students to the transportation program at their annual Grad House Social on September 26<sup>th</sup>.

As expected, the ambiance of this event was full of joy and fun as conversations flowed between new students and old students and the transportation professors. Thanks to the Grad House executives for the pizza, snacks, and beverages served throughout the event.

### 2013 Christmas Luncheon

As the end of 2013 approached, UW-ITE held the annual tradition of Christmas luncheon event. UW-ITE Student Chapter executives hosted the event on the 18<sup>th</sup> of December 2013 at King's Buffet. Most of the transportation

students and professors who, along with their families, enthusiastically participated in this event. Beside the colorful meals and tasty desserts, what made this event special was the draw held at the end of this event by the manager of King's buffet and Tae Kwon, transportation PhD candidate and UW-ITE student chapter's Vice President. Gift cards and King's Buffet VIP discount cards were some of the fun prizes the lucky winners went home with. UW-ITE wants to take this opportunity and wish all the ITE community, transportation students and professors another year full of success, health and prosperity.



2013 Christmas Luncheon

# Project Highlight

## Making Railway Crossing Safer with Science



FROM LEFT TO RIGHT: PROFESSOR FRANK F. SACCOMANNO, PROFESSOR LIPING FU

Making sure people are safe at a railway crossing involves considering everything from the condition of the road and railway, to accident history and speed of the traffic and trains.

Highway-rail grade crossing collisions are a source of concern to railway authorities and the public at large. The Canadian Transportation Safety Board (TSB) reported that, between 1993 and 1999, an average of 45 fatalities and 60 injuries per year took place in Canada as a result of grade-crossing collisions.

Our professors, Liping Fu and Frank Saccomanno, and their students have developed a unique web-based software

program called GradeX that is taking the guesswork out of safety at railway crossings.

“Transport Canada makes a huge investment every year in railway crossings across the country and they want to make sure decisions are based on science,” says Professor Fu.

### Web application assesses danger

GradeX is a web application that his research team has developed over the past decade to assess danger at over 30,000 rail crossings in Canada and to rank them according to the risk. This decision-support tool can be used by railway safety engineers and decision-makers in Canada to identify and target grade crossing hotspots, evaluate countermeasures, and prioritize safety improvement projects.

Transport Canada collects information about the condition of roads or highways where railways cross. They look at the condition of the pavement, traffic, sightline, speed, and other factors that affect safety.

“We take that information and run it through GradeX which gives us the rankings,” says Fu. GradeX is available on a website and is easily accessible to engineers who need the information.

Once officials know which crossings should receive attention first, they can look at which safety countermeasures would give the biggest bang for the buck. Some of the corrective measures could include signage, installation of gates, lights or, in extreme cases, a grade separation.

### **Ottawa fatalities**

Professor Fu is working on a two-year project that will help Transport Canada improve

GradeX and identify even better ways to assess potential dangers at crossings.

In October 2013, six people were killed and 30 individuals were injured in Ottawa when a bus crashed through a safety barrier and into a Via train. Fu said discussion about his study was in the works long before the accident.

He said there is no way of knowing whether using a tool like GradeX might have been able to prevent the Ottawa accident, but he noted the overall goal is to make crossings safer and reduce the number of rail-related accidents.

-Communications and Public Affairs,  
University of Waterloo.

Edited from the Waterloo Stories available at

<https://uwaterloo.ca/stories/waterloo-research-makes-railway-crossings-safer-science>.



## Graduate Student Highlight

Amin Hamdi



Amin is currently undertaking his doctoral studies in Transportation Engineering in the Department of Civil and Environmental Engineering at the University of Waterloo, under the supervision of Professor Susan Tighe. His research involves evaluation of the feasibility of using the Mechanistic-Empirical Pavement Design Guide (MEPDG) to improve pavement management. The research will evaluate the type, quality and quantity of pavement management data that is required for calibration and validation of the MEPDG at a provincial scale. Amin has worked on Assessment of Long-Term Performance and Cost-Effectiveness of Standard Pavement Treatments used in PMS2 as a project for the Ministry of Transportation, Provincial Highways Management Division Report Highway Infrastructure Innovation Funding



Program. Amin has published two journal papers and two conference papers to date.

His Masters degree is from the University of King Abdulaziz University (K.A.U), Jeddah, Saudi Arabia, in Civil Engineering (Transportation Engineering) on Pavement Condition Index at K.A.U. After earning his master's degree, Amin was involved in various projects in the field of Civil Engineering with contractors and consultants offices in Saudi Arabia.

Amin is proud to be in a part of Centre for Pavement and Transportation Technology (CPATT) at the University of Waterloo. In his free time, Amin enjoys activities such as travel, playing soccer, swimming, and spending time with his boys. He also worked as a volunteer with the Saudi student club in Waterloo for the past couple of years.





# Alumni Highlight

Fei Yang, M.A.Sc., EIT



Fei started his graduate study under Dr. Bruce Hellinga's supervision in 2009 in the University of Waterloo. During his study, he was involved in the Region of Waterloo Transit Data (AVL/APC) Monitoring project. His research focused on transit delay estimation using archived AVL/APC data. This study has been carried on and extended by existing graduate students in many aspects.

After his graduation in 2012, Fei started his career as a Transportation Planning/Engineering Analyst in GHD Inc. (formerly Sernas Group). At work, he has been exposed to various types of transportation projects from both private and public sectors, such as Traffic Impact Study, Parking Study, Traffic Management Plan, Environment Assessment, Corridor Study, Preliminary Design, etc.

Most recently, he is involved in two large-scale public sector projects which are the North York Service Road Environment Assessment Addendum study for the City of Toronto and the Thornton Road Environment

Assessment study for the City of Oshawa, respectively. In these two projects, he acts as a key transportation team member in providing travel demand forecasting and traffic operation analysis to support the decision-making on municipal planned future transportation infrastructure (e.g. design elements such as road alignment, lane configuration, etc.). Throughout work, he likes the collaboration with other colleagues from different departments by which he has been learning the engineering practice from different disciplinary aspects. In the meantime, he is also working on a Traffic Impact Study for the Kedron Area Secondary Plan in the City of Oshawa. This study mainly aims at evaluating the future traffic impact generated by the subject area, and providing the road needs assessment. From these projects, he has been enjoying the experience of applying knowledge and skills obtained at school to the real world practice. He said that, "The most exciting thing for work is that every project is unique in a certain aspect and generally

requires of your engineering judgement and/or learning some new skills and policies on the basis of different conditions. You can have strong feeling of self-fulfilment when a project gets delivered, satisfies client's and review party's requirements and receives positive feedback".

Fei also emphasizes personal growth. He always put his eyes on the transportation engineering/planning related publications and news by which he can keep the same pace with the development of transportation engineering/planning field. With the accumulation of the industrial experiences, he is working towards his P. Eng designation.

Fei pursues a work and life balance. During his spare time, he is into baby-sitting his adorable two-year old daughter Lauren. When staying with Lauren, Fei has the feeling of replaying his own childhood vividly. Besides, he also

likes fishing, watching science fiction movies and traveling with families.

Tips for current graduate students who want to pursue career in industrial world:

According to the Fei's experience, there are mainly three things which he would like to share. One is to take the advantage of the resources at university as much as you can. For instance, the workshops offered by Career Centre are great services which can help students improve their job hunting skills. Second is to be prepared for what companies want when you are looking for a job. One good way to understand what companies target at is to research related industrial job descriptions before you enter job market. Third is to highlight your skills, confidently present yourself in front of public and never give up your goal easily.

## Recent Awards

Received by UW-ITE Student Chapter Members

Congratulations to the following students on their achievement!

Student	Program	Awards
Ehsan Bagheri	PhD	Ontario Graduate Scholarship (OGS) (2013-2014) ITS Canada Michel Van Aerde Memorial Scholarship (2013)
Gulfam-E-Jannat	PhD	The J. Alan George Student Leadership Award

## Closing Remarks

Transportation is such a vast field of research, the amount of knowledge and work can be a bit overwhelming. I experienced this for the first time at Transportation Research Board, which took place mid-January, just before the release of this edition of WatMoves. Around 10,000 delegates descended onto Washington DC to share and exchange knowledge on everything from airports to traffic analysis zones, from cycling models to pavement structures. TRB is a true testament to the breadth and depth of transportation knowledge. As a first-time attendee still in my initial phases of my academic program, the amount of information is daunting and it causes me to reflect on my interests in transportation and question what my contributions to the transport field will be. However, while the research field

seems large, the transportation community is quite small and caring. At TRB, it always seemed that the Canadian students would find each other at the different social events. In any case, everyone I talked to was willing to discuss their work and interests, as well as exchange ideas and resources. It is this collaborative atmosphere that is an inspiration for me at UW-ITE. I'm reminded that even though we're students now exploring our respected avenues of transportation, we will most definitely cross paths professionally in the future.

Congrats UW-ITE for an exciting 2013. I'm looking forward to exploring transportation together in 2014!

*Kevin Yeung,  
UW-ITE Chapter Secretary*



**UW-ITE 2013 Christmas Luncheon**



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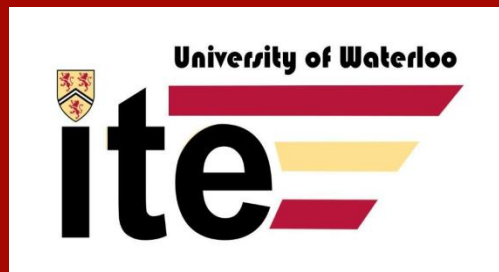
[uw.ite.sc@gmail.com](mailto:uw.ite.sc@gmail.com). There is also more information about the student chapter and

Visit our website for more information on sponsorship opportunities.

sponsorship levels in our website, [www.civil.uwaterloo.ca/transportation/ite](http://www.civil.uwaterloo.ca/transportation/ite).

We also welcome companies who are interested in coming to Waterloo to present unique transportation projects that they are undertaking.

**Want to be our  
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**UW-ITE Student Chapter**

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