

WATMOVES

UW-ITE STUDENT CHAPTER NEWSLETTER

Issue No. 7 Winter Term 2014

What's Inside

Message from the Executive Committee

(Page 2)

Academic Events

(Page 3)

Social Events

(Page 5)

Project Highlight- Waterloo Transit Perception Study

(Page 6)

Doctoral Student Highlight - Tae. J. Kwon

(Page 8)

Masters Student Highlight - Sahar Tolami Hemmati

(Page 9)

Alumni Highlight- Amir Ghods

(Page 10)

Recent Awards

(Page 11)

Closing Remarks

(Page 12)



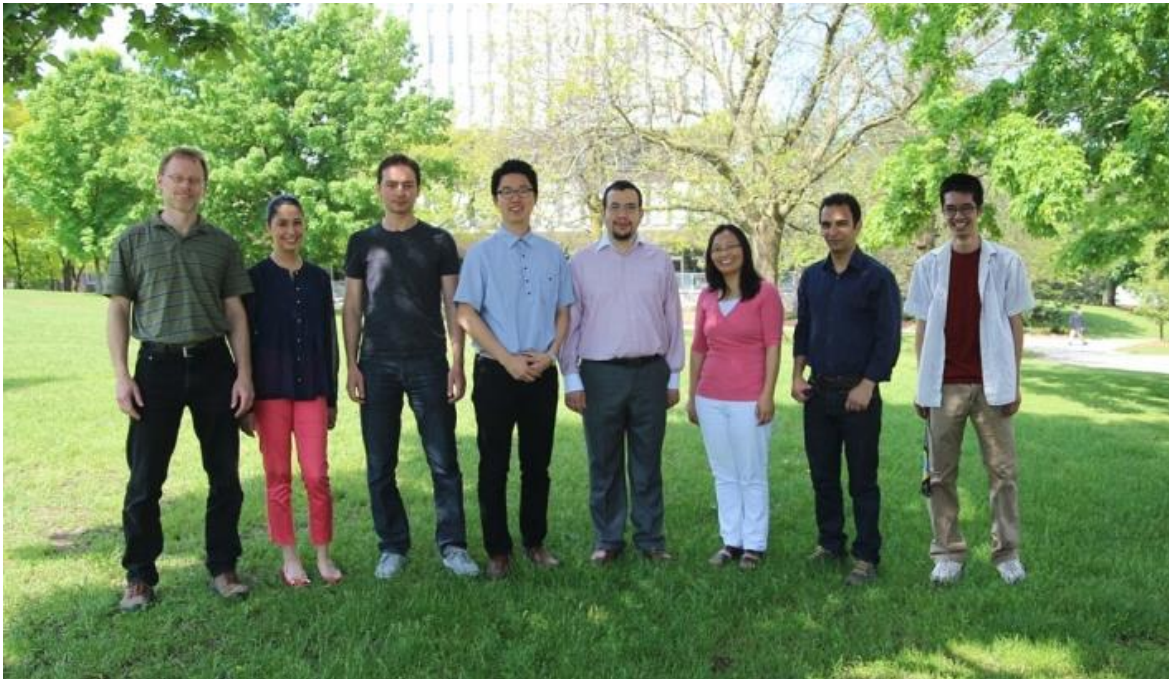
Photo Credit: OneClass.com

Message from the Executive Committee

Welcome to the winter edition of WatMoves: the seasonal newsletter of the University of Waterloo ITE Student Chapter (UW-ITE-SC). Publishing this newsletter represents the culmination of another year's hard work from each of the UW-ITE-SC committee members. The committee is responsible with keeping the chapter's activities running and bringing our members together by organizing different activities. These activities include visits to organizations and industries to familiarize our members with their activities; organizing seminars and inviting guest speakers to update our members with the latest research topics and innovations in the transportation field; organizing social gatherings to help students and professors to interact outside of the academic

atmosphere. Aside from these activities which require a considerable amount of volunteering, the committee is also responsible with seeking funding and undertaking all the administrative works that keep the chapter active.

Now that we are at the end of the term of the current committee, we are glad that we have accomplished all of these together with the support of our members whom without them none of these could have happen. The new elected committee will start on May 1st, 2014 and we would like to wish them a year full of success and accomplishment.



The 2013 – 2014 UW-ITE Executive

From Left to Right:

Prof. Bruce Hellinga (Chapter Advisor), Sahar Tolami (Academic Events Coordinator), Ehsan Bagheri (President), Tae J. Kwon (Vice President), Amir Zarinbal (Webmaster), Lalita Thakali (Treasurer), Shahin Karimi (Social Events Coordinator), Kevin Yeung (Secretary)

Academic Events

Sahar Tolami Hemmati



Winter term was a great academic season for the UW-ITE Student Chapter. During this term the student chapter hosted academic seminars and a networking event.

Seminars

On January 29, Professor Zachary Patterson of Concordia University, shared his work on stated preference (SP) Surveys.

In his presentation titled “Video-game vs. Text-only SP Survey of Neighborhood Preference” he talked about taking advantage of the capabilities available in gaming engines to compare the results of stated preference surveys of neighborhood choice administered either as a video game, or as a traditional text-only survey.

Our next presenter was Dr. Alireza Kasaiezadeh from University of Waterloo. On March 13, he talked about “Integrated Active Safety Systems in Modern Cars”.

Presenting next was Mr. Anoop Srivastava, the Inspector General of Indian Railways. On his visit, on April 17, he talked about “Interpretive Structural Modeling for Security Management in the context of Indian Railways”. He touched upon the major security issues of Indian Railway Systems and the importance of effective communication with travelers.



Dr. Alireza Kasaiezadeh's lecture on “Integrated Active Safety Systems in Modern Cars”.



Mr. Srivastava's Lecture on "Interpretive Structural Modeling for Security Management in the context of Indian Railways".

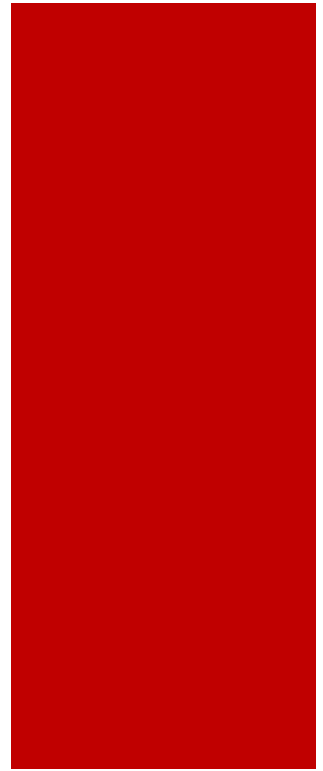
Networking Event

On Wednesday, April 16, Steven Buckley, General Manager for Transportation Services in the City of Toronto, visited University of Waterloo. Steven gave a presentation on the current challenges in the City of Toronto, and entertained questions from students.

Afterwards, students enjoyed the remaining time networking with Steven and some of his colleagues.

Social Events

Shahin Karimi



Following Sochi Winter Olympics and the Canadian curling team's championship, the UW-ITE executives rolled up their sleeves to celebrate this victory not on campus but on the curling sheet! Holding the curling event for the first time, UW-ITE hosted over 10 transportation graduate students in this "only-on-TV-looks-easy" sport!

Upon arrival to KW Granite, the curling club, the grads were introduced with the rules; all explained by the coach and then got themselves equipped with proper gear: slider soles and a broom. And this was the only easy part!

The sport demands a robust stretching body with perfect balancing on the ice while aiming and sliding the *rock* (granite stone) towards the *house* (target). Divided into two groups, the participants practiced, competed, and saw quite funny moments throughout the two hours. The whole event ended by enjoying pizza and pop.



2014 UW-ITE Curling Event

Project Highlight

Waterloo Transit Perception Study

Dr. Jeff Casello, Ian Dunlop and Kevin Yeung



A person's choice to take transit for his or her trip may be influenced by a number of transit service attributes including expected travel time or cost of the trip, as well as the reliability, comfort, or crowdedness of the transit service. Mode choice models, which are used in planning transit infrastructure and networks, are relatively effective in representing the influence of expected travel time and cost on transit use. However, the other factors that may influence transit utilization are not included in mode choice models as data is usually unavailable. The Waterloo Transit Perception Study will fill this gap as it measures the influence of reliability, crowdedness, and comfort on transit mode choice.

A major component of this research study is the collection of data regarding commuter satisfaction of their transit trips. The research team has developed a smartphone application – *The WPTI Transit Survey App* – that will be used throughout the study. Participants are encouraged to download

the application to their smartphone and initiate the app whenever they travel on transit. The app will ask the transit rider a number of questions throughout the trip regarding their expected arrival time, their current satisfaction, and the transit service attributes influencing their satisfaction. Furthermore, the app will track their travel path so that the research team can verify the participant's answers with the bus GPS data. The accumulation and analysis of this data will enable the research team to understand the relative importance of reliability, crowdedness and comfort on transit satisfaction and mode choice.

When this research study is complete, the research team will have a better understanding of what influences transit mode choice, and will have a better representation of human behaviour in mode choice models. Moreover, these models may be applied to help planners and engineers determine which transit technology (e.g. bus, rail, metro, etc.) is appropriate for future transit infrastructure projects.

This research study is being conducted by Dr. Jeff Casello, Ian Dunlop and Kevin Yeung of the Waterloo Public Transit Initiative. More information about this project is available at: <http://www.civil.uwaterloo.ca/wpti/projects/TPStudy.html>.

The screenshot shows the 'WPTI Survey' app interface. At the top, there's a status bar with '3G' signal, a battery icon, and the time '10:03'. Below the status bar is a header with the 'WPTI Survey' logo and title. The main question is 'What is your satisfaction with the trip so far?'. Below the question is a horizontal slider with 'Not at all' on the left and 'Completely' on the right. A blue dot is positioned approximately one-third of the way from 'Not at all' towards 'Completely'. Below the slider is a grey 'Submit' button.

The screenshot shows the 'Supplemental Questions' screen of the 'WPTI Survey' app. At the top, there's a status bar with '3G' signal, a battery icon, and the time '10:12'. Below the status bar is a header with the 'WPTI Survey' logo and title. The main question is 'How are these factors influencing your satisfaction?'. Below the question are four separate sliders, each for a different factor: 'Comfort:', 'Crowding:', 'Weather:', and 'Transit system performance:'. Each slider has 'Negatively' on the left, 'Neutral' in the middle, and 'Positively' on the right. All four sliders have a blue dot positioned exactly in the middle, indicating a 'Neutral' response for all factors. Below the sliders is a grey 'Continue' button.

Doctoral Student Highlight

Tae. J. Kwon



Tae J. Kwon, originally from South Korea, is a Ph.D. candidate under supervision of Dr. Liping Fu at the University of Waterloo. In the past, he studied in the field of Civil Engineering with Geomatics option with a focus on satellite remote sensing and GIS, in which he worked on extraction of 3-D geometric highway parameters, and developed image classification/segmentation algorithms for detecting hazardous materials in the ocean. His current research involves development and evaluation of models and algorithms for determining the optimal locations of a road weather information systems (RWIS) station, a tool which provides information critical to the improvement of the decision-making process for winter road maintenance.

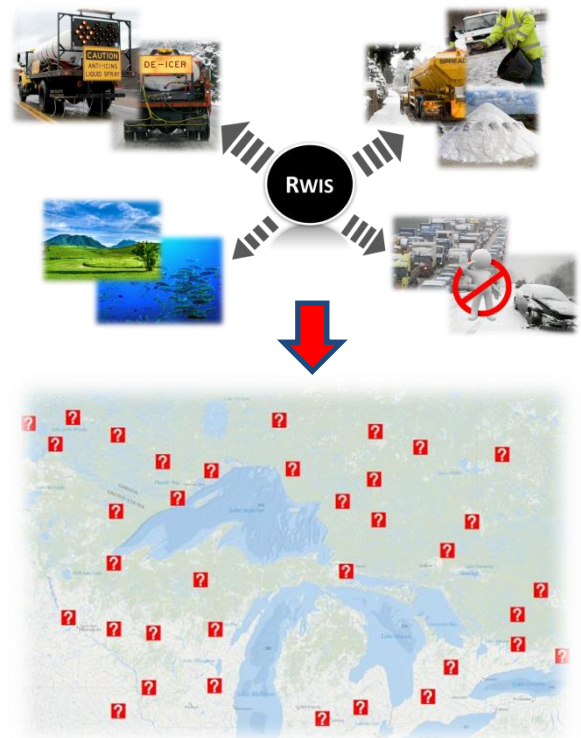
“I am hoping that my research could contribute to improving the current winter road maintenance operations and further the safety and mobility of the travelling public”, says Tae.

Tae has published four journal and eight conference papers, and one book chapter to date, and also been privileged with the departmental scholarship for six times since he joined our department in 2011. He says that he is very lucky to pursue his graduate studies at Waterloo and be



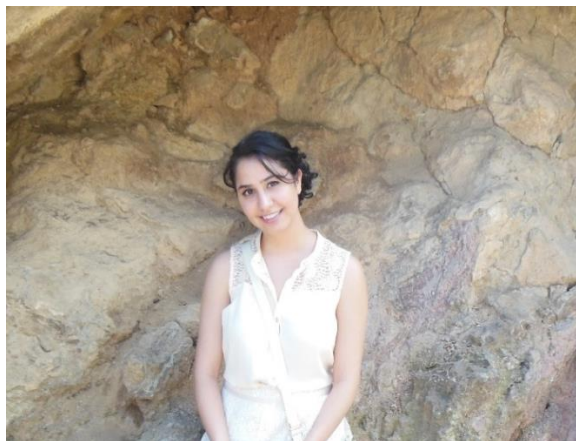
part of the transportation group in particular as he has established many invaluable contacts that will support his charitable cause in the future.

In his free time, he loves to camp out in the wild areas and also enjoys swimming, snowboarding, and playing squash.



Masters Student Highlight

Sahar Tolami Hemmati



Sahar Tolami is a Masters candidate in the department of Civil and Environmental Engineering at the University of Waterloo. She is working under the supervision of Professor Hellinga. She completed her undergraduate studies in Civil Engineering from University of Toronto.

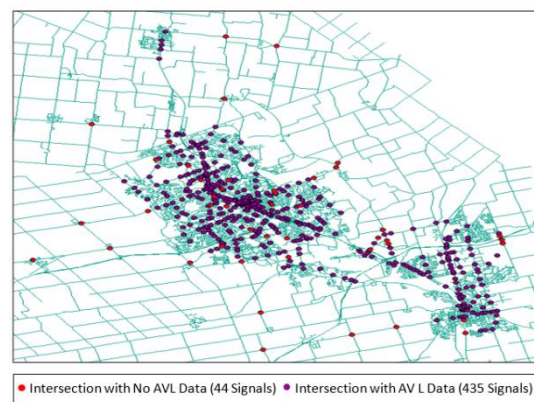
Her graduate research explores the possibility of evaluating the performance of signalized intersections using AVL/APC data.

The travel times of transit systems that operate on mixed use right-of-ways are often dictated by the delays experienced at signalized intersections. However, collecting signal delay data for the entire network is not a trivial task and can be quite costly via conventional methods. Sahar's research focuses on estimating (1) stopped delay at signalized intersections experienced by transit and general purpose vehicles and (2) the extent of the queue. Her proposed method uses archived data gathered by automatic vehicle location and automatic passenger count systems which transit agencies deploy on their fleet. The research focuses on intersections with near-sided transit stops.

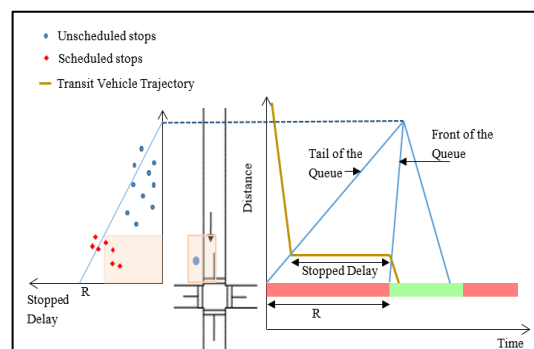
Sahar enjoys serving student groups and has worked as a volunteer for several associations. She serves as the Academic Event Director at UW-ITE-SC and she has organized many academic seminars



presented not only by Canadians, but also international transportation professionals and academics.



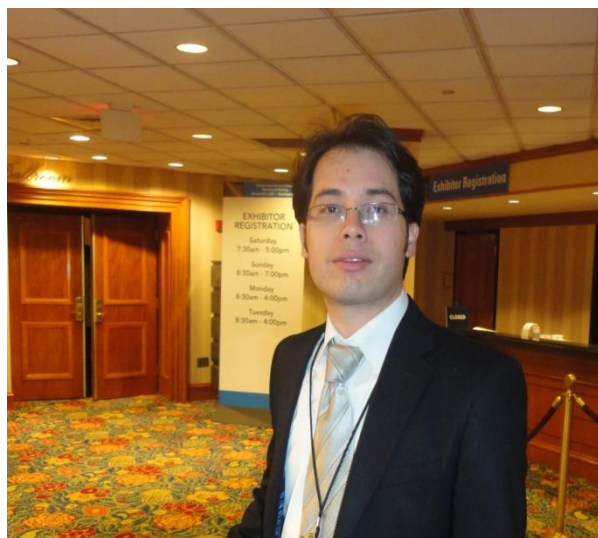
With Archived AVL/APC data, Municipalities can screen and evaluate the performance of almost all the signalized intersection within their network. The image above represents the Region of Waterloo's Road Network



Investigating the signal stopped delay pattern presented by AVL/APC data captured from GRT's transit vehicles.

Alumni Highlight

Amir Ghods, PhD



Amir Ghods is a recent PhD graduate from the transportation research group at UW. He was supervised by Prof. Frank Saccomanno and his thesis research was concerned with safety and traffic performance analysis for two-lane highways. During his study, he developed a new micro-simulation framework to model overtaking maneuvers on two-lane highways. This model is currently being considered by PTV Group to be incorporated in VISSIM traffic simulation model. During his time at UW, Amir was involved in other projects including development of a turning movement count algorithm for Miovision Technologies, a Waterloo based company working on a traffic adaptive signal control system. This project was supervised by Professor Liping Fu.

After graduation, Amir received an Industrial Research and Development Fellowship from NSERC and joined Giatec Scientific Inc. in Ottawa. Giatec is a knowledge-based start-up company that provides sensory tools for infrastructure owners and operators so that they can better evaluate the state of their assets and make

informed decisions on their future. Amir has been involved in a project to develop an instrumented vehicle to screen road networks for infrastructure damages and possible traffic safety issues in geometry and roadside devices. The system makes use of stereo vision cameras and image processing techniques. Amir enjoys working in multi-disciplinary areas where he can apply his knowledge of transportation engineering and his electrical engineering background in practice.

When he was at UW, Amir was actively involved in the UW-ITE Student Chapter and served as President in 2011. He believes being involved in the ITE chapter is a great opportunity for students to improve their managerial and team work skills and be in close touch with the transportation industry. He led the chapter to acquire its first sponsors, its new-look website, and publish the first issue of WatMoves.

In his spare time, Amir plays volleyball and soccer and enjoys spending time with his wife and friends camping and travelling. He believes in work-life balance and loves to be a multi-dimensional person.

Recent Awards

Received by UW-ITE Student Chapter Members

Congratulations to the following students on their achievement!

Student	Program	Awards
Gulfam-E-Jannat	PhD Candidate	<ul style="list-style-type: none"> • The Queen Elizabeth II Graduate Scholarships in Science and Technology, Winter 2014
Soroush Salek Moghaddam	PhD Candidate	<ul style="list-style-type: none"> • Queen Elizabeth II Graduate Scholarship in Science and Technology, Fall 2013 • Dr. Michel Van Aerde Memorial Transportation Scholarship - CITE 2014
Cameron Berko	MSc Candidate	<ul style="list-style-type: none"> • Queen Elizabeth II Graduate Scholarship in Science and Technology, Winter 2014

Closing Remarks

Kevin Yeung

This WatMoves edition wraps up another successful year for the University of Waterloo ITE Student Chapter. There has been a number of insightful academic seminars, and interactive social events throughout this term and the entire year. Thanks again to the current executive for their time and dedication to the Student Chapter. Thanks also to the entire Chapter for participating in all of the events!

On April 24, 2014, the Chapter elected its new Executive Committee for the 2014-2015 year. The new executive team includes:

President: Kevin Yeung
Vice President: Sajad Shiravi
Secretary: Wenfu Wang
Academic Events Coordinator: Michael A. Linton
Social Events Coordinator: Janki Bhavsar
Treasurer: Jing Min
Webmaster: John Lu

Another exciting year in transportation awaits! Look out for new academic and social events throughout this summer and into the fall. All the best to the new executive team!

Sponsors

UW-ITE Sponsors

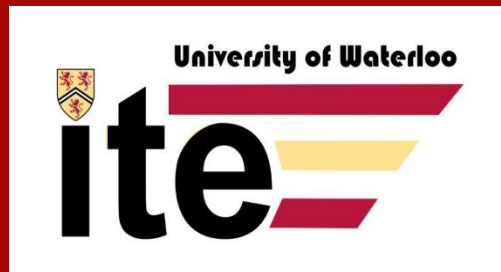
Visit our website for more
information on sponsorship
opportunities.

If you would like to get more information on sponsorship opportunities, please contact us at

uw.ite.sc@gmail.com. There is also more information about the student chapter and sponsorship levels in our website, 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
Sponsor?**



UW-ITE Student Chapter

Contact:

uw.ite.sc@gmail.com

www.civil.uwaterloo.ca/transportation/ite