

ECSE NEWSLETTER

*The latest news and updates from The Department of
Electrical, Computer and Software Engineering*



IMPORTANT DATES

September 4th - 5th, 2021
Fall semester orientation

September 6th, 2021
Labour Day, No Lectures

September 7th, 2021
Lectures begin, fall semester.

October 11th, 2021
Thanksgiving Day

October 12th - 17, 2021
Fall Reading Week

Message from the Department Chair

During the last sixteen months of the Pandemic, our world has been tested in many ways. While the heroes of this crisis were the front-line workers, health professionals, and scientists who were working very hard to fight the COVID-19 virus, the economy has been under pressure. Many people lost their jobs or were forced to work from home. The education industry was no exception. Two semesters and a half of online teaching and research experience taught us that we should be open-minded to technology and get prepared to embrace the changes.

...continued from previous.

There were challenges in the online setting: we were not prepared for evaluating and assessing students' work in the online setting. The answer for this is not just "more technology". We need to re-invent online education and look at the assessment problem by thinking out of the box. The second problem was the students' engagement in the class activities and experiential learning which is very essential in the Engineering programs.

This year was very eventful for us within the ECSE program. We reviewed both our undergraduate programs. In June, for two weeks, we had our external reviewers visit the department (virtually) and discuss the program. We are still waiting for their constructive feedback. Here I would like to thank all faculty members and staff that contributed in the internal review process. The review was not possible without the great support from our former ECSE administrative assistant Shari Martin.

We have also established the ECSE industry advisory board. The members have been selected from several Electrical and Software industries.

The members are:

- Ms. Falguni Shah, Elexicon Energy
- Dr. Alaa Khamis, General Motors
- Ivano Labricciosa, Oshawa Power and Utilities Corporation
- Min Zheng, Xplornet Communications Inc.

In the graduate studies, we took one big step to design and started our MASc program in Software Engineering. The proposal is presently under review and we remain positive that it will be supported by the university. I would like to thank Dr. Qusay Mahmoud for his hard work in preparing this proposal.



Dr. Masoud Makrehchi

In 2020, the ECSE chair was tasked to prepare the department research strategic plan in accordance with the university vision and research plan. A committee of faculty members from both Electrical and Software was formed and started working on the research plan. The report is in preparation and will be shared with faculty for their consultation in July 2021.

In July 2020, I was appointed as the interim chair of the ECSE department. It was an honour for me to serve my fellow colleagues in the department. I would like to thank Dean Dr. Hossam Kishawy for his trust in me and also his guidance, and my fellow colleagues for their support during my term. Starting July 2021, Dr. Vijay Sood will be the new chair of the department. I wish him good luck and will be actively involved during the transition. I am sure all colleagues that offered me their support during the difficult time of the pandemic, will continue supporting Dr. Sood.

Say Hello

to our new faculty member.

Dr. Sanaa Alwindian
Assistant Professor
Software Engineering



Dr. Sanaa Alwindian joined the Department of Electrical, Computer and Software Engineering in July 2021 as an Assistant Professor. Her research interests are in the areas of Software Engineering, Goal-oriented Requirements

Engineering and Model-based System Engineering.

In addition, she has other research interests including Mobile Ad hoc Networks, Cloud Computing, and Natural Language Processing. Her work has been published in top peer-reviewed journals and conferences. From June 2020 to June 2021, Dr. Alwindian worked as a Postdoctoral Research Fellow at the Université de Montréal, with the GEODES Software Engineering Research Lab. From 2015 to 2020, she worked as a research and a teaching assistant at the University of Ottawa, and as a researcher with the CyberJustice lab. She has considerable teaching experience in several academic institutions. Dr. Alwindian holds a Ph.D. degree in Computer

Science from the University of Ottawa (2020), an M.Sc. degree in computer science and a B.Sc. degree in Computer Information Systems from Jordan University of Science and Technology (2009 and 2007 respectively).

From 2013 to 2019, Dr. Alwindian was the recipient of the prestigious Ontario Trillium Scholarship (OTS), awarded to the best international doctoral students from around the world (with a first-class average and excellent academic record) to study in Ontario universities. She has also received the International Ontario Graduate Scholarship (OGS), the University of Ottawa Excellence Scholarship, the International Doctoral Scholarship, the BMO Financial Group Scholarship, and the Scientific Research Scholarship/Jordan.

2021 Capstone Design

The year 2021 was another successful year for ESCE undergrad student to do their Capstone projects. Although the pandemic situation and online learning environment was and still is a challenge, it didn't interrupt our growth in terms of the number and the quality of the projects. In all, 38 project teams took part this year from both Software and Electrical Engineering programs.

Similar to previous years, students' teams were able to enter the competition. Due to the pandemic, we were unable to have our exciting Capstone exhibition; instead students posted their demos on recorded videos.

For more information, and to watch the videos, please [click here](#).

2021 Capstone Competition Winners

Most Innovative Engineering Design

OccuTracker: Occupancy Tracker Using IBM's Open Liberty Framework

Team Members: Gabriel Gelgor, Emil Ilnicki, Aryan Kukreja, Pawan Patel

Faculty Advisor: Dr. Akramul Azim

Most Technical Proof of Concept

Design and Development of an AI-Powered & Notification Driven Baby Monitoring System

Team Members: Brett Hausdorf, Peter Levine, Ibrahim Noor-Mohammed, Daniel Silva

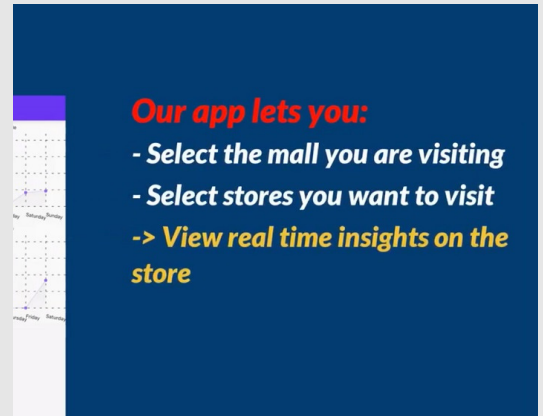
Faculty Advisor: Dr. Khalid Hafeez

Most Influential Project

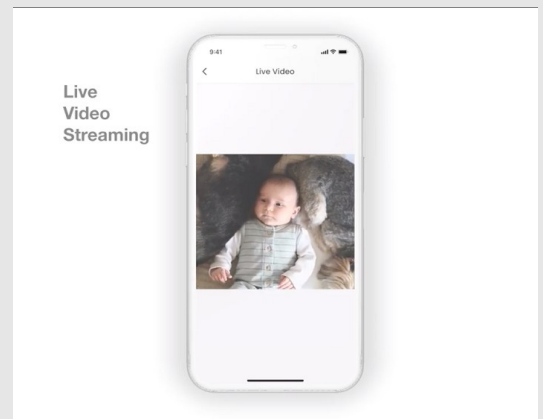
COVID Risk Aversion/Alert System

Team Members: Brett Hausdorf, Peter Levine, Ibrahim Noor-Mohammed, Daniel Silva

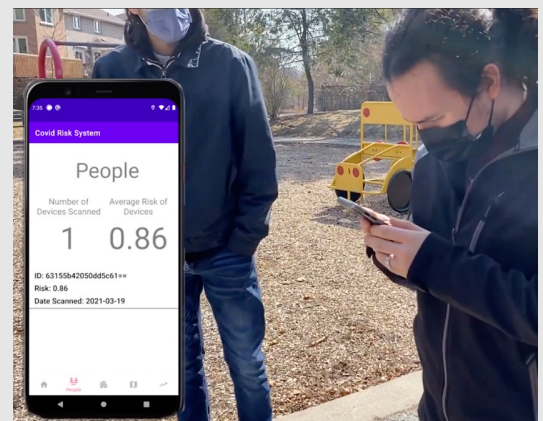
Faculty Advisor: Dr. Khalid Hafeez



Most Innovative Engineering Design



Most Technical Proof of Concept



Most Influential Project



Congratulations to all the winning capstone teams and their academic advisors Dr. Azim and Dr. Hafeez. And a special thanks to the ECSE Capstone coordinator Dr. Mahmoud.



Celebrating Student Success

Two top-ranked Undergraduate Electrical Engineering students were awarded the prestigious Ontario Professional Engineers Foundation for Education Gold Medal during Convocation on June 25, 2021. Sue Tessier, a director from the Ontario Professional Engineer Foundation joined us at our virtual convocation to present the award alongside Dr. Min Dong, Associate Dean Academic from the Faculty of Engineering and Applied Science. The Foundation awards a Gold Medal to the student in each faculty who achieves the highest standing in the final examinations of his or her final year.

Congratulations
Joshua Howorth,
Electrical Engineering
and
Anton Shchukin,
Electrical Engineering



In this photo: Dr. Min Dong, Sue Tessier, Josh Howorth, Anton Shchukin.

Research Updates

Awards and Funded Grants 2020-2021

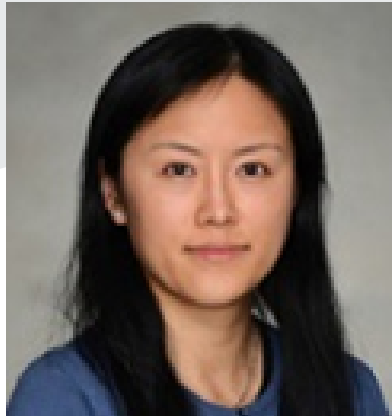
PI	Project Title	Source of Funding	Total Fund
Qusay Mahmoud	A Framework for AI-Enabled Middleware Components for Securing IoT Systems	NSERC	\$30,000
Qusay Mahmoud	Exploring Blockchain for Consent and Privacy Data Management	Office of the Privacy Commissioner of Canada	\$49,968
Shahram Shahbazpanahi	Spectrum Sharing and Massive MIMO	OCE	\$100,000
Mikael Eklund	(Co-applicant) SENTRYNET: Developing trust between soldiers, civilians and robots	DND	\$281,175
Akramul Azim	Test Case Prioritization with ML	IBM Center of Advanced Studies	\$189,300
Sheldon Williamson	(Renewal) Electric Energy Storage Systems for Transportation Electrification	NSERC CRC-Tier 2	\$500,000
Vijay Sood	(Co-applicant) Investigation and implementation of pulse-electro thermal de-icing in commercial electric vehicles	NSERC ENGAGE Application with BETTERFROST Technologies Inc.	\$80,000
Khalid Elgazzar	Intelligent Real-time Traffic Analysis from Live Video Streams	NSERC/OCI Alliance/VIP	\$70,932
Khalid Elgazzar	Runway Condition Detection and Analysis using Deep Learning	NSERC Alliance	\$100,500
Khalid Elgazzar	Industry-oriented 5G testbed for Industrial Internet of Things (IIoT)	Mothersill Family, Donation	\$25,000
Langis Roy	Investigation of lidar performance in adverse weather conditions	Ontario Centre of Innovation (OCI), TalentEdge Fellowship Program (TFP) with partnership with MAGNA International Inc.	\$60,000

Congratulations

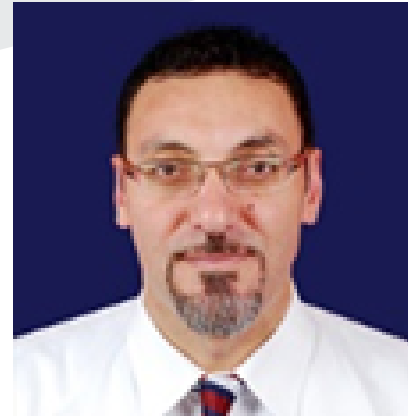
New appointments in the ECSE Department



Dr. Vijay Sood
Department Chair, ECSE



Dr. Min Dong
Associate Dean, Academic



Dr. Qusay Mahmoud
Associate Dean, Experiential
Learning and Engineering
Outreach



Dr. Khalid Elgazzar
ECSE Graduate Program
Director



Shannan Crowder
Department Program
Assistant