



# ***FAST TIMES***

FEBRUARY 2024

Dear Colleagues,

As February unfolds its wintry embrace, we find ourselves at the threshold of a unique and enchanting occurrence – the leap year! With an extra day gracefully added to our calendars, February 29th emerges like a rare gem, offering us an additional opportunity to reflect and grow. As we embark on this quadrennial leap, let us seize the moment to leap into new ideas, collaborations, and endeavors that will propel our academic community to greater heights including lifelong learning.

Whether we are starting our first job, are seasoned professionals or making a lateral move into another position, we will grow and thrive if we continue to learn.

The famous Greek Philosopher Plutarch once said, “The mind is not a vessel to be filled, but a fire to be kindled.” Lifelong learning has never been more important in these times. Our environment, our world and our lives seem to be changing more rapidly than ever before, and this requires us to adapt and learn.

[Continue reading on next page.](#)

**WE ARE**  
**FUTURE FOCUSED**

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In that spirit, I pose this question to the FAST Family: “What are you doing to continue your journey in lifelong learning and in doing so, ensuring your mind stays active and engaged?”

This month, we celebrate Professor Arman Hamzehlou Kahrizi who has successfully defended his Ph.D. thesis and Professor Ibrahim Tamim whose latest findings will be published by the IEEE International Conference on Communications (ICC) 2024! We also announce new and returning clubs including the AWS DeepRacer Competition!

We have more compelling stories that I look forward to you discovering on the following pages, including capturing all

the moments from the Humber Pathways Fair and our very own Co-op Career Fair that we highlight in our Home Sweet Humber profile.

There are many programs that we offer at Humber across many faculties. Please reach out to your manager if you are interested in any that Humber has to offer or feel free to connect with me at [Dave.Smiderle@humber.ca](mailto:Dave.Smiderle@humber.ca)

Warm regards and Happy Leap Year!



Dave Smiderle, Ph.D.  
Associate Dean

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## HOME SWEET HUMBER

CELEBRATING AND SHOWCASING LIFE AT NORTH CAMPUS AND CARRIER DRIVE!

HUMBER PATHWAYS FAIR

JANUARY 23 - 24



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## FAST CO-OP CAREER FAIR



Share your life on campus images in the next FAST News issue! Please submit to Jennifer Buchalter: [jennifer.buchalter@humber.ca](mailto:jennifer.buchalter@humber.ca)

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## MARCH IS NATIONAL ENGINEERING MONTH

Humber FAST is proud to return as the lead partner of National Engineering Month – Canada’s largest celebration of engineering excellence!

Dive into a month of premium engineering content featuring panel discussions, skill-building workshops, and networking opportunities. These free, in-person and online events are led by the engineering community and designed to inspire engineering professionals, students, educators and industry.

FAST is gearing up to coordinate initiatives that honour International Women’s Day, Friday, March 8, and shine a spotlight on how we are continuing to advance engineering education. Stay tuned!

Visit the [NEM website](https://www.nemontario.ca) to register and for a full listing of events.

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## AWS DEEPRACER COMPETITION RETURNS TO HUMBER COLLEGE

Start your engines - The AWS DeepRacer competition is returning to Humber College!

This is the world's fully autonomous racing league with a 1/18th scale race car driven by machine learning (ML) algorithm. The inaugural 2023 AWS DeepRacer competition was a resounding success where student developers of all skill levels got hands on with machine learning through a cloud-based 3D racing simulator.

Humber College's partnership with AWS (Amazon Web Services) provides an opportunity to integrate curriculum in a fun, learning environment for our Humber students where they can apply their critical thinking & advanced machine learning skills.

Students will meet weekly in the DeepRacer club to explore the challenges and solutions to find the best reinforcement learning algorithm to be implemented.

Interested students/teams are invited to send an email to Mihai Albu at [mihai.albu@humber.ca](mailto:mihai.albu@humber.ca), expressing their interest in participating in this competition. Visit this [AWS presentation](#) for more information.

See last year's competition in action [here!](#)





### **NEW CYBER SECURITY CLUB LAUNCHES**

**SUBMITTED BY PROFESSOR HAIDAR JABBAR, PH.D.**

Embarking on a groundbreaking journey, we proudly introduce the Humber Cybersecurity Club (HCCSC), a pioneering initiative that is set to redefine the landscape of cybersecurity education and exploration. At HCCSC, we are more than just a club; we are a dynamic community of passionate individuals dedicated to empowering excellence in cybersecurity.

#### **MISSION: EMPOWERING EXCELLENCE IN CYBERSECURITY EDUCATION AND EXPLORATION.**

Our mission is to create a collaborative environment where members can thrive, learn, and contribute to the ever-evolving field of cybersecurity. With a focus on certification preparation, trend exploration, industry collaboration, and personalized advising, HCCSC is poised to be the go-to hub for cybersecurity enthusiasts at Humber College.

#### **WHO CAN JOIN**

HCCSC warmly welcomes students from the NEST program entering their third or fourth semesters, provided they possess a solid foundation in cybersecurity fundamentals and a genuine passion for the field. As we grow, we look forward to gradually expanding our community to include students from more semesters and diverse specializations. We encourage individuals with a demonstrated interest in security to become part of our vibrant community. Whether you're well-versed in foundational concepts or eager to deepen your understanding, our inclusive environment ensures that all passionate students can contribute to and benefit from the collective knowledge and experiences within the club.

Join us to embark on a journey of skill development, collaboration, and exploration in the exciting realm of cybersecurity.

For any inquiries, questions, or further information about HCCSC, please feel free to reach out to Haidar Jabbar at [haidar.jabbar@humber.ca](mailto:haidar.jabbar@humber.ca)

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## WANTED: SPEAKERS FOR THE INAUGURAL FAST SCHOLARLY AND PROFESSIONAL CONFERENCE

As we embark on this quadrennial leap, let us seize the moment to leap into new ideas and host the inaugural FAST Scholarly and Professional Conference on Thursday, February 29!

Co-chaired by Georges Livanos and Francis Syms, this is an opportunity for FAST members to engage and share scholarly activities, projects and research that you are interested in working on.

Thursday, February 29

10AM - 3PM

Location: North Campus (Room TBC)

Lunch and refreshments will be provided

Have your voice and ideas heard! We are seeking speakers for this event that are excited to present their work. It can be at the beginning, middle or end of the project (all are welcome)!

If you are interested in participating, please contact Silvia Navarrete at [Silvia.Navarrete@humber.ca](mailto:Silvia.Navarrete@humber.ca)

Stay tuned for more information in the next few weeks!



## ASSOCIATE DEAN SHARES INDUSTRY INSIGHTS WITH CBC HERE AND NOW

Associate Dean, Francis Syms, recently shared his industry insights on the class action lawsuit, filed in 2018, against Apple Inc. and Apple Canada Inc. The tech company has been accused of altering the performance of some of their phones.

Listen to Francis' CBC Here and Now interview [here](#).







## BARRETT CENTRE FOR TECHNOLOGY INNOVATION

### FORTIFYING EDUCATION: A COLLECTIVE VENTURE WITH DUFFERIN-PEEL CATHOLIC DISTRICT SCHOOL BOARD

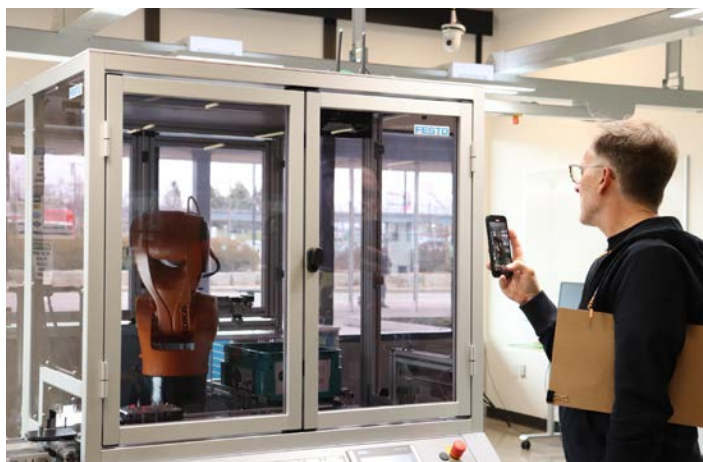
The Barrett Centre for Technology Innovation recently hosted teachers from the Dufferin-Peel Catholic District School Board, sparking a collaborative exploration of the future of education through technology.

This visit led to the initiation of a series of STEAM workshops for approximately 600 students, demonstrating a commitment to dynamic learning and hands-on experiences in Science, Technology, Engineering, Arts, and Mathematics (STEAM). This collaborative effort aims to empower students with versatile skills for the evolving digital age.

The BCTI is committed to contributing to advancing education through innovative teaching methodologies. The STEAM workshop provides students with valuable insights and opportunities for interdisciplinary growth. The collaborative spirit lays the foundation for a lasting impact on education. Through dedicated initiatives, the institutions aspire to prepare students effectively for the challenges and opportunities of the future.

The journey ahead promises exciting developments and achievements, fueled by the insights and joy derived from a day of collaborative exploration.

Follow the Barrett Centre for Technology Innovation on [LinkedIn](#).





## FAST CELEBRATIONS



### **PROFESSOR SUCCESSFULLY DEFENDS PH.D. THESIS**

Congratulations to Arman Hamzehlou Kahrizi who has successfully defended his Ph.D. thesis at Toronto Metropolitan University!

#### **Framework for Critical Incident and Emergency Response Training in Virtual Environments**

This dissertation presents a novel framework and a software prototype for training and evaluating the effectiveness of first responders and explosive ordnance disposal (EOD) technicians in critical incidents and emergency response scenarios.

The framework, called CIERT, incorporates multiple dimensions and metrics to measure the efficacy of software-based simulations, such as virtual reality (VR), for handling improvised explosive devices (IEDs) and other high-risk situations.

The software prototype, called USP, is a VR simulator that allows the implementation and participation of various real-world scenarios, such as IED detection and disposal. This work validates the CIERT framework and the USP simulator through a series of experiments and statistical analyses, demonstrating their potential and practical implications for enhancing the training and preparedness of first responders and EOD technicians.

Congratulations Arman!



### PROFESSOR'S RESEARCH TO BE PUBLISHED IN IEEE INTERNATIONAL CONFERENCE COMMUNICATIONS

Congratulations to Professor Ibrahim Tamim, Ph.D., B.Eng., whose research on intelligent 5G networks titled “*Security and High-Availability while Upholding Network Defense Patterns: The Advantages of A2C in O-RAN VNF Placement*” will be published in the IEEE International Conference on Communications (ICC) 2024, in Denver, CO.

ICC is one of two Institute of Electrical and Electronics Engineers (IEEE) Communications Society's flagship conferences (ICC and Globecom). Each year, close to 2,000 attendees from over 70 countries attend IEEE ICC to engage in robust technical paper sessions, innovative tutorials and workshops, and engaging industry sessions. This 5-day event is known for bringing together audiences from both industry and academia to learn about the latest research and innovations in communications and networking technology, share ideas and best practices, and collaborate on future projects. Past patrons of the conference include Google Cloud, Telus, Nokia, Ericsson, Samsung, and Intel.



#### The abstract of Ibrahim's Research

Next-generation radio access networks such as the Open Radio Access Network (O-RAN) have alleviated many of the 5G demand and management challenges. However, ORAN's intelligence, openness, and virtualization have significantly increased the attack surface of RANs. This is specifically dangerous for critical 5G use cases such as Ultra-Reliable and Low-latency Communications (URLLC) due to its strict latency and reliability constraints. In this work, we focus on enhancing the security of the data streams and the security of the ML training and inference hosts in O-RAN URLLC deployments by introducing additional network security functions to O-RAN's service function chains. Our goal is to maximize the amount of traffic examined by the security functions while adhering to O-RAN's operational and functional constraints and upholding network defense patterns. Two security function types, encryption Virtualized Network Functions (VNFs) and intrusion detection system VNFs are chosen to achieve this objective. Encryption VNFs provide an additional layer of encryption for data traffic, while IDS VNFs protect the ML training and inference hosts of our solution.

To solve this complex task, an advantage actor-critic deep reinforcement learning agent is developed, which actively allows adaptation to dynamic traffic. We demonstrate that our solution is capable of increasing the number of security functions in URLLC deployments allowing increased data protection and securing its own training and inference hosts.

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## WELCOME TO FAST

Please join us in extending a warm welcome to the following new full-time faculty!

### Engineering & Built Environment

Jakub Dzamba, Architectural

Michael Taylor, Architectural & Sustainable

### Information & Communications Technology Cluster

Jigisha Patel, Java Script & Mobile

### Skilled Trades & Technology Cluster

Aaron Rosenblum, Plumbing

Adam Lapple, HVAC

Paul Peragine, Electrical

## HONOURING BLACK HISTORY MONTH

February is Black History Month and this year's theme, "Black Excellence: A Heritage to Celebrate; a Future to Build", celebrates the rich past and present contributions and accomplishments of Black people in Canada, while aspiring to embrace new opportunities for the future. Our newly appointed FAST EDI representative, Ticker-Lee Thompson, has created this month's whiteboard to shine a spotlight on this important initiative. Come visit our reception areas both at North Campus & Carrier Drive to engage with the FAST community and add your comments!



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## UPCOMING EVENTS

### February 19

Family Day, Campus is Closed

### February 26 – March 1





Winter Reading Week, Campus is Open

### February 29

2023 T4 Tax Statements (Statement of Remuneration Forms) are available to view, download and print from the Human Resource Management System (HRMS) by February 29, 2024.

## WE WANT TO HEAR FROM YOU!

**FAST TIMES** recognizes and celebrates the achievements of our faculty and students. To share your successes with us, please submit stories and images to the Office of the Senior Dean, Julie Pasquin: [julie.pasquin@humber.ca](mailto:julie.pasquin@humber.ca)

-  [@HumberAppTech](https://twitter.com/HumberAppTech)
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