



HUMBER

Faculty of Applied Sciences & Technology

FAST News

FEBRUARY 2023

DEAN'S MESSAGE

Dear Colleagues,

Despite being the shortest month of the year, February is a month filled with significance. It's home to Valentine's Day, Black History Month, is the only month that changes in length depending on the year, and it is the last continuous month of the winter season before March brings us into spring.

Love is in the air as the Humber community has celebrated several exciting announcements that one way or another, circles back to love. Love for our students, our faculty and our community.

The Barrett family consistently demonstrates their love and commitment to Humber College, most recently with the \$30 million transformational gift from the Barrett Family Foundation. The largest gift to an Ontario college, the Barrett family's generosity has helped reinforce Humber's leadership in technology and polytechnic education.

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**WE ARE
FUTURE FOCUSED**

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I was honoured to travel to Sault Ste. Marie and attend an event where the Federal Government recently showed their love for our Bachelor of Engineering program! The Honourable Patty Hajdu announced a \$530,000 investment from the Federal Economic Development Agency for Northern Ontario (FedNor) that will support this degree, co-delivered with Sault College, to ensure our students are hands-on learning with state-of-the-art advanced technology.

I also had the wonderful opportunity to spend a day at Sault College where I engaged with first- & second-year engineering students, met the faculty and even attended a class where we connected in the virtual classroom with Humber engineering students! The positive feedback I received warmed my heart and reassured me that this co-delivery model is sustainable and effectively delivering the program to learners at both Colleges.

Next month, FAST looks forward to honouring International Women's Day and continuing to advance engineering

education and emerging technologies as the lead partner of National Engineering Month – Canada's largest celebration of engineering excellence. This month-long March conference will be a mix of in-person, virtual, and hybrid events that will spark bold discussions with diverse perspectives from engineering professionals, students, educators and industry. I hope you will join us as we participate in and host two events with a panel of leaders from academia and industry. Registration is free!

We have many more compelling stories that I look forward to you discovering on the following pages.

Valentine's Day is a wonderful time to remind our friends, family and loved ones how much they mean to us. This month, I hope you can take a moment to share a heartfelt laugh and sentiment with someone you care about.

With gratitude,
Dr. Farzad Rayegani, Ph.D., P.Eng, FEC.
Senior Dean



HUMBER COLLEGE RECEIVES \$30 MILLION GIFT FROM THE BARRETT FAMILY FOUNDATION

Humber College is a leader in innovation and this \$30 million transformational gift from the Barrett Family Foundation is an investment that will prepare our students to become the innovative and strategic problem-solvers of tomorrow.

The Faculty of Applied Sciences & Technology empowers future creators, engineers, designers, builders, journey people, makers, techies & thinkers. We are grateful to the Barrett Family Foundation for their shared vision and recognizing how our polytechnic model of education plays an important role in nurturing and empowering learners to pursue STEM and how our programs are meeting industry demand for graduates from emerging technology fields.

The Foundation's investment will support science, technology, engineering, and mathematics (STEM) programs at Humber and will foster a learning environment where students can develop and build digital and innovation skills critical for today and the future.

Notably, the investment in Humber will provide access to education through more than 100 annual scholarships to students entering and continuing their studies in degrees and diplomas including our three new Bachelor of Engineering degrees in Mechatronics, Information Systems and Built Environment. Students will also be eligible to receive funding through experiential and work-integrated learning opportunities and skills training grants.

We are truly grateful to the Barrett Family Foundation for supporting our students and faculty with opportunities for digital transformation and innovation. Thank you for paving the way for interdisciplinary teams of students, faculty and industry experts to solve complex, real-world problems.

Visit [this link](#) to read the feature article in Humber Today.



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DESIGNS CREATED BY FAST STUDENTS UNVEILED AT THE CONSUMER ELECTRONICS SHOW IN LAS VEGAS

Prof. George Paravantes (FMCA) and Dr. Dennis L. Kappen (FAST) proudly unveiled the results of the 2022 ARROW HMI - Humber Industrial Design competition at the Consumer Electronics Show (CES) in Las Vegas, January 2023!

The Human Machine Interface (HMI) designs were created by the graduating Class of 2022 Bachelor of Industrial Design program from the collaborative course between the 4th year industrial design and interaction design students. These designs simulated the dashboard experience for the consumer and were integrated into the ARROW, Canada's First Zero Emissions Concept Vehicle, the premise being to showcase Canadian design and manufacturing talent on the CES world stage.

For the unveiling, the clients integrated interactive simulations on the dashboard, from all student team submissions, that created a unique in-car experience for the driver and passenger from the time of ingress to the point of egress from the vehicle, providing driver and passenger engagement.

Ahmed Sagarwala, Associate Dean of FMCS was also present at the unveiling of the ARROW concept vehicle at the renowned Las Vegas Convention Center.

The Automotive Parts Manufacturers' Association (APMA) of Canada launched the first, original, full-build, zero-emission concept vehicle named Project Arrow. An all-Canadian effort, it will be designed, engineered, and built through the joint efforts of our world-class automotive supply sector and post-secondary institutions.

Visit [this link](#) to learn more about Project Arrow.





GOVERNMENT OF CANADA INVESTS IN BACHELOR OF ENGINEERING, MECHATRONICS DEGREE

Our Senior Dean Dr. Farzad Rayegani was honoured to attend an event in Sault Ste. Marie where the Honourable Patty Hajdu announced a \$530,000 investment from the the Federal Economic Development Agency for Northern Ontario (FedNor) to support our Bachelor of Engineering, Mechatronics degree program that gives students access to new opportunities.

Co-delivered with Sault College, this degree gives graduates hands-on learning with knowledgeable faculty, staff and state-of-the-art advanced technology.

The co-delivery model for the Engineering Mechatronics degree is an innovative approach to creating accessible education and the first in Canada to be co-delivered between two post-secondary institutions. The Bachelor of Engineering in Mechatronics, along with Humber's Bachelor of Engineering in Information Systems and Built Environment programs, are meeting industry demand for graduates from emerging technology fields.

The future is bright and together we are blazing the paths for future leaders and empowering the creators, engineers and thinkers setting a course for tomorrow.





INTERIOR DESIGN STUDENTS VISIT TORONTO'S NEWEST ATHLETIC FASHION STORE

Our Interior Design students headed downtown to visit Toronto's newest athletic fashion store and its unique design. Permission has reimagined retail and activewear to inspire real, resilient, and mindful women. Students met with head architect, Trevor Wallace of Reflect Architecture to learn how the company designed the store to reflect Permission's brand values.



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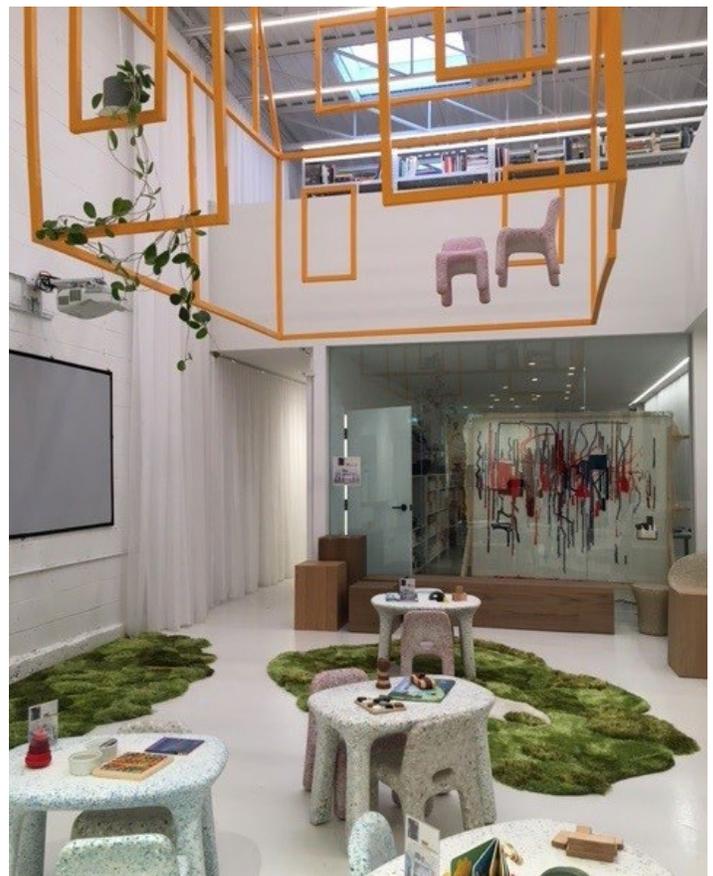
BACHELOR OF INTERIOR DESIGN STUDENTS GAIN INSPIRATION FROM IDEA EXCHANGE AT DESIGNTO

Our 4th year Bachelor of Interior Design students attended Mason Studio for an Idea Exchange as part of DesignTO, a festival that brings people together to design a better future and one that is more sustainable.

Hosted by Mason Studio co-founder, Stanley Sun, students experienced the “2033: An Optimistic Future” exhibit that showcased everyday life in an optimistic future.

Set in the year 2033, Mason Studio, Goodee, along with various collaborators, co-created a place where the care for people and our planet comes before all else. The site-specific installation was a Market Gallery featuring products promoting people, an indoor garden to rejuvenate the mind and body, a café playhouse for kids and adults, a hands-on workshop, a book exchange library, and a workspace for post-secondary students.

Stanley shared how his design vision is informed by a unique blend of formal studies in human sciences, fine arts and interior design.



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MARCH IS NATIONAL ENGINEERING MONTH

Humber FAST is a proud partner of National Engineering Month – Canada’s engineering event of the year!

NEM 2023 will host 5 weeks of in-person, online & hybrid premium engineering content consisting of panel discussions, skills-building workshops and networking events designed to benefit the engineering community. NEM Ontario partners & OSPE members are FREE to register and attend events using promo code: **NEMVIP**

Humber FAST will be hosting and participating in several events including:



NEM 2023 Kick-Off Event

Wednesday, March 1

6:00 – 9:00 PM

Ontario Science Centre

Dr. Farzad Rayegani will join senior faculty from leading colleges and universities to discuss the future of the engineering degree. How are engineering educators preparing the next generation of engineering leaders? How are academic institutions future-proofing engineering degrees to ensure the degree remains relevant, respected, and valued? What are they doing to create more opportunities for future generations to become Professional Engineers?

Panelists

Dr. Janusz Kozinski, P.Eng. – Dean, Lakehead University Faculty of Engineering

Dr. Farzad Rayegani, P.Eng. – Senior Dean, Humber College Faculty of Applied Sciences & Technology

Dr. Heather Sheardown, P.Eng. – Dean, McMaster University Faculty of Engineering

Moderator

Dr. Marilyn Powers, P.Eng. – Chair, Ontario Society of Professional Engineers

Wednesday, March 8 at 6:00 PM

International Women’s Day

Theme Week: Lifelong Learning

Title: Humber College Champions Women in STEM

Description: A panel of fearless women and supportive men will share their authentic stories and how there is strength in our differences to bring innovation, productivity, and pride to a more elastic workforce. Join us as we inspire, connect and empower participants to recognize and celebrate International Women’s Day.

Visit the [NEM website](#) to register and for a full listing of events.



STUDENT CAPSTONE PROJECT SPOTLIGHT

JAMES FREEMAN

Program: Computer Systems Technician – Information Technology Infrastructure and Services

Capstone Project: Barback

Artificial Intelligence (AI) and Machine Learning (ML) are growing industries demanding highly skilled graduates. Dr. Jonathan Kim, in collaboration with FAST faculty members, staff, members of the Program Advisory Committee (PAC) and industry partners, have recently developed a new graduate certificate in AI and ML. Designed for students with experience in computer programming, software development or computer science, students will learn the fundamentals to apply AI models and ML algorithms to a broad range of practical applications including natural language processing, image processing, computer vision and for business decision making.

While this graduate certificate takes flight, we look back at a 2022 student ML capstone project that showcases this growing industry.

Tell us about your project?

Today more than ever, it is important to carry only the product that you need to keep cash freed up for use in other areas of the business. To do so you need to find the balance between carrying too little product, while simultaneously being wary of buying too much. It can be difficult to manage inventory levels due to the vast number of drinks that can possibly be ordered. A single drink can have as little as 2 and up to 10 or more different ingredients. Not only that, but bar sales can often be affected greatly by things like seasonality, location, or weather as well. I set out to create a system that would take all these factors into consideration and help bar owners and with the decision making involved in managing their bar's inventory.



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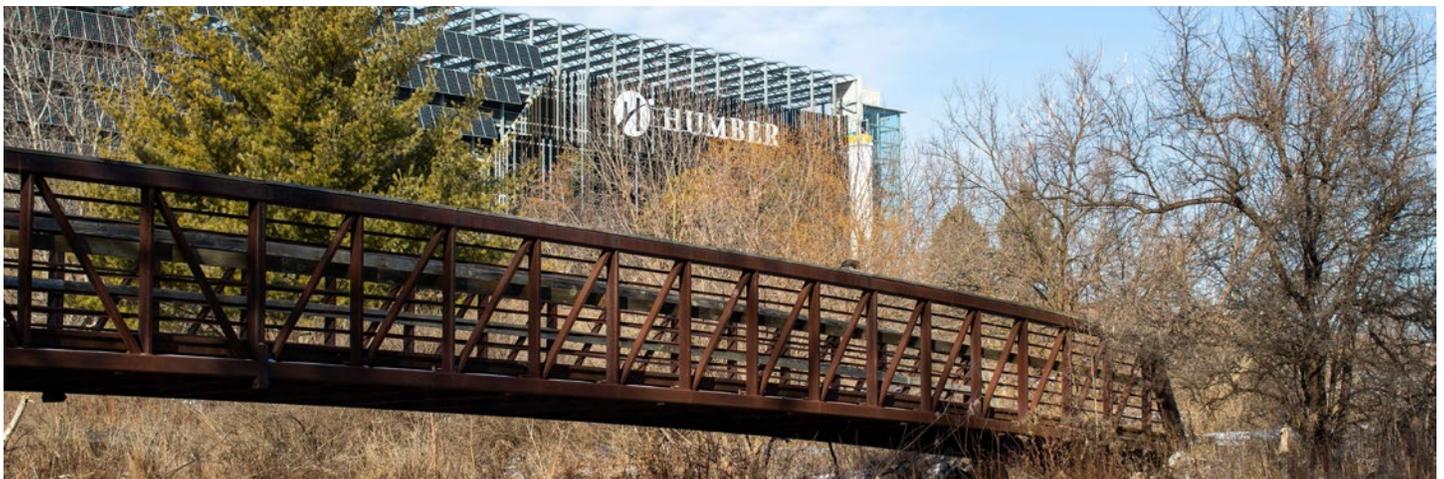
I have noticed over the years that one thing each bar manager had in common was the way they decided how much product to order; They simply looked at how much product was sold during this time last year. While that offers some information it is not very reliable. Maybe the bar is relatively new, so those numbers don't exist, or maybe the bar has been open for two years but only recently started to see a significant increase in sales; Those numbers are no longer relevant.

So, I set out to create a system that would offer as much guidance when making this decision. I implemented a way to use machine learning along with Excel and Python that will predict how much product a bar will sell in each week. The goal of this project is to provide decision support to bar managers to help them optimize their ordering strategy.

Machine Learning (ML) is a way to collect data to answer questions. In this case the data we are collecting is previous liquor sales, and the question we are answering is how much of an item will a bar sell next week? There are so many other industries, like medicine or improving autonomous vehicles, that have implemented ML in some form or another with great success. If it has worked so well for these other businesses, why can't it work just as well for a bar? So, I created a system that puts ML to work to improve the guess work involved in determining how much product is required in each week. The goal of this project is to provide decision support to bar managers to help them optimize their ordering strategy.

What are you most proud of?

I am proud that I was able to create a unique project that was built from the ground up with the guidance of Timothy Wong. This project required a lot of resourcefulness and problem solving. In the end I was able to combine my work experience with my studies to create a system that has a real-world application.



UPCOMING EVENTS

FEBRUARY 20

Family Day – College is closed

FEBRUARY 27 – MARCH 3

Reading Week – No classes. College is open

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ALL DAY BREAK-FAST WITH FARZAD

As we build upon the past five years and embark on this continuous journey together, we welcome your feedback!

To schedule a Break-FAST chat with Farzad or any member of the Leadership Team, please contact the Office of the Senior Dean, Julie Pasquin julie.pasquin@humber.ca



WE WANT TO HEAR FROM YOU!

FAST NEWS 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

-  [@HumberAppTech](https://twitter.com/HumberAppTech)
-  [@HumberAppTech](https://www.instagram.com/HumberAppTech)
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SENIOR DEAN'S IMPACT REPORT 2017-2022

With great pride, May 2022 marked my five-year milestone serving FAST as senior dean. Celebrating the accomplishments of the FAST community is a joy and privilege.

What we have accomplished together during my five-year tenure as senior dean would not be possible without the extraordinary accomplishments of my predecessors, the Humber community and our FAST leadership team.

I humbly present to you the [Senior Dean's Impact Report: 2017-2022](#) – a culmination of our collaborative approach these past five years. We have accomplished incredible growth; launched new programs including three historical engineering degrees; invested in addressing the growing skills gap; fostered strategic industry partners; and helped to transform education on a global stage.

I hope you will take the time to find a quiet corner, sip your beverage of choice and dive into this comprehensive report that chronicles and celebrates our collective achievements!