Yichen Wu

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Madarin — English — French

Education

Bachelor of Engineering (B.Eng) - Software Engineering Sept. 2019 – May 2023

McGill University *CGPA: 3.97/4.00*

Prizes and Awards

British Association Medal May 2023

Award to the student in the graduating class with the highest position in the final examinations

Dean's Honour List Jul. 2022, May 2023

Award to the GPA top 10% students of the faculty of engineering

Hatch Scholarship (Value: $10,000) Jul. 2022

Award based on the high academic standing an overall contribution to university life by the faculty of Engr

Summer Undergraduate Research in Engineering (SURE) Award May 2021, May 2022

Total Value: $13,500

Tomlinson Undergraduate Award (Total Value: $600) Apr. 2020, Dec. 2020

Award for the contribution to the mentorship program for improving science education

James McGill Scholarship Award (Value: $3,000) Aug. 2019 - Jan. 2023

Award for academic achievement and leadership abilities in school and community acitivies *Renewed for 4 years*

Research Experience

Volunteer Researcher Sept. 2022 - Present

Heartwise AI Lab

- **Processed large-scale video clinical data** with integration of the test results from diverse sources to support machine learning model training
- Train **task specific deep learning models** for angiogram data to simplify and improve the accuracy of heart disease diagnosis under Dr. Robert Avram.

Volunteer Researcher May. 2022 - Present

Intelligent Technologies in Anaesthesia Group

- Designed and implemented a **vital sign simulation** for a hybrid sedation system (HSS) to facilitate experimental validation and eliminate reliance on real patient data during system testing under Dr. Thomas Hemmerling.
- Engineered a self-built Raspberry Pi-based video laryngoscope for **Augmented Reality (AR)** glasses and integrated with oxygen saturation detector, enhancing endotracheal intubation and improving first-pass success rates.
- Full stack python development of SAT-MAP enabling **3D visualization** of subcutaneous fat layers from ultrasound scans to support quantitative analysis in medical imaging research.

Research Intern May 2022 - Aug. 2022

Biofluids and Global Health Lab

- Calibrated a **complex compartmental model** for COVID-19 transmission in a fictional Quebec population, based on the foundational Susceptible-Infected-Removed (SIR) model, to predict infection dynamics and support intervention strategy ideation.

Research Intern May 2021 - Aug. 2021

Broadband Communications Research Lab

- Developed an **AI-assisted transfer learning** tool for hybrid multi-user, massive Multiple-input and Multiple-output (MIMO) systems to optimize signal power allocation for users.

Publications

- Daccache, N., **Wu, Y.**, Jeffries, S. D., Zako, J., Harutyunyan, R., Pelletier, E. D., Laferrière-Langlois, P., Hemmerling, T. M., "Safety and recovery profile of patients after inhalational anaesthesia versus target-controlled or manual total intravenous anaesthesia: a systematic review and meta-analysis of randomised controlled trials", *British Journal of Anaesthesia*, May 2025.
- Harutyunyan, R., Gilardino, M. S., **Wu, Y.**, Hemmerling, T. M., "Description of a Novel Web-Based Liposuction System to Estimate Fat Volume and Distribution", *Aesthetic Surgery Journal*, Nov. 2024.
- Torres-Florez, S., Flores Anato, J. L., He, J. H., Garrido Portilla, V., **Wu, Y.**, Maheu-Giroux, M., Racine, É., Wagner, C. E., "Evaluating COVID-19 vaccination policy in Québec (Canada) using a data-driven dynamic transmission model", *PLOS Computational Biology*, Submitted in Nov. 2024.

Professional Experience

Software Developer in Test Associate Oct. 2023 - Present

Dayforce Inc.

- Conduct comprehensive testing, including end-to-end automation, API validation, and performance benchmarking.
- Research and integrate language model–based machine learning solutions to streamline workflows and enhance development efficiency.

Teaching Assistant Jan. 2021 - May 2021

McGill University *COMP250 - Intro to Computer Science (Data structure and algorithms in Java)*

Teaching Assistant Jan. 2022 - Apr. 2023

McGill University *ECSE211 - Design Principles and Methods (Raspberry Pi robotic project in Python)*

Leadership & Community Engagement

Ambulance St. John Dec. 2023 - Present

Medical First Responder

McGill Electrical & Computer and Software Engineering Student Society May 2022 - Apr. 2023

Vice-President, Academic

McGill Engineering Undergraduate Society Novwas 2022 - Mar. 2023

Equity Facilitator

Invited Workshops

Canadian Institute for Advanced Research on(CIFAR) Solution Network Meeting Jan. 2025

Invited Guest

- Participated in the Integrated AI for Health Imaging Solution Network meeting.

***Examining the Responsible Deployment of AI in Healthcare*, CIFAR** Dec. 2023

Invited Guest

- Participated in a panel discussion on ethical implications of deploying AI in healthcare under clinical setting.