CHEN-YANG SU | PH.D. STUDENT

McGill University
Quantitative Life Sciences
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(Last updated: March 18, 2023)

SUMMARY

- **Past research areas**: Health economics, Applications of machine learning to improve health care and clinical decision-making, Human Genetics and Genomics, Imitation Learning, Inverse Reinforcement Learning
- **Programming Skills**: Python, R, C, Java, MATLAB, OCaml, Git, Shell, PyTorch, Scikit-Learn

EDUCATION

Ph.D., Quantitative Life Sciences, McGill University, Montreal, Canada   Sep 2022–Present
First year rotations: **Alton Russell** (Sep - Dec 2022); **Alan Barkun** (Jan - Apr 2023);
Advisors: *to be determined*

M.Sc., Computer Science, McGill University, Montreal, Canada   Sep 2020–May 2022
Advisors: **Brent Richards** (Departments of Medicine, Human Genetics, Epidemiology and Biostatistics) & **Joelle Pineau** (School of Computer Science / Meta AI / Mila - Quebec AI Institute).
Thesis: *Identifying a proteomic signature for COVID-19 outcomes*

B.Sc., Joint Major in Computer Science & Biology, McGill University, Montreal, Canada   Sep 2016–May 2020
Faculty of Science Dean's Multidisciplinary Undergraduate Research List

HONORS AND AWARDS

Mitacs Globalink Research Award ($6,000 CAD), Mitacs (Declined)   Mar 2023
Award provides a minimum of $6,000 CAD for conducting between 12-24 weeks of research abroad. Project title: *Predicting iron recovery after blood donation: comparing machine learning and biology-informed modeling approaches*.
The award was declined due to a time conflict.

Graduate Mobility Award ($6,000 CAD), McGill University (Declined)   Mar 2023
Award funds 4 months of research abroad at $1,500 CAD per month. "A limited number of awards are available each year on a competitive basis."
The award was declined due to a time conflict.

2nd Place, McGill Quantitative Life Sciences 3MT Competition ($25 CAD), McGill University   Dec 2022
2nd place for three-minute thesis competition in the Quantitative Life Sciences PhD program (3 min presentation + Q&A).

Graduate Excellence Award ($3,000 CAD), McGill University   Nov 2022– Apr 2023
$3,000 CAD awarded in monthly installments of $500 CAD over 6 consecutive months by Quantitative Life Sciences.

Graduate Excellence Award ($3,000 CAD), McGill University   Sep 2022– Aug 2023
$3,000 CAD awarded in monthly installments of $250 CAD over 12 consecutive months by Quantitative Life Sciences.

Graduate Excellence Award ($2,000 CAD), McGill University   Sep 2022
One-time amount of $2,000 CAD awarded by Quantitative Life Sciences.

Doctoral Training Award ($84,000 CAD), Fonds de recherche du Québec – Santé (FRQS)   Sep 2022–Aug 2026
Ranking: 2nd place in *Genetics, Genomics, Proteomics, Transcriptomics, Epigenomics, Bioinformatics, Clinical Genetics* category.

Quantitative Life Sciences Stipend Award ($25,000 CAD), Quantitative Life Sciences   Sep 2022–Aug 2023
$23,000 award with an additional $2,000 in "recognition of the excellence of your dossier, and our strong interest in admitting you."

LOJIQ Fellowship ($700 CAD), Quebec Scientific Entrepreneurship (QcSE)   Jun–Sep 2021
Awarded for participation in the Quebec Scientific Entrepreneurship Program. Project title: 77655, NA Quebec / Scientific Entrepreneurship Program (QcSE) / The Quebec Research Fund (FRQ) - Summer 2021.

1st Place, 21st Annual McGill Biomedical Graduate Conference ($250 CAD), McGill University   May 2021
Best poster presentation (3 min presentation, 2 min Q&A) under the "Genetics and Gene Expression" category.

LDI / TD Bank Studentship Award ($25,000 CAD), Lady Davis Institute, Montreal, Canada   Apr 2021–Mar 2022
Competition awards a minimum of $18,000 CAD for 1 year with $10,000 CAD supported by TD Bank.

Research Scholarship ($7,125 CAD), Mila - Quebec Artificial Intelligence Institute, Montreal, Canada   May–Aug 2020
Awarded for 16 weeks of full-time research. Supervised by Dr. Wonseok Jeon and Prof. Joelle Pineau.

Faculty of Science Dean's Multidisciplinary Undergraduate Research List, McGill University   May 2020
Recognizes graduating "*students who have participated in substantial and broad undergraduate science research*".

Science Undergraduate Research Award (SURA) ($7,000 CAD), McGill University (Declined)   Mar 2020
Awarded for 16 weeks of full-time research and development activity under the supervision of a McGill Faculty of Science professor. Awarded by the Department of Biology.
The award was declined due to a time conflict.

Golden Key International Honour Society   Jan 2017
By invite only to the top 15% in a program of study by GPA.

Dean's Honour List, McGill University, Montreal, Quebec, Canada   2017
Awarded to the top 10% in the Faculty of Science by GPA.

Dalhousie University Entrance Award, Halifax, Nova Scotia, Canada (Declined)   2016
Awarded based on academic merit.

Graduation Program Examinations Scholarship ($1,250 CAD), British Columbia, Canada   2016
Awarded to the top 5000 Grade 12 students in BC (based on their percentage score) on all five provincial exams.

RESEARCH GRANTS

Canadian Institutes of Health Research (under review)   Oct 2023 - Oct 2025
File/Application number: RN506959 - 496394
W. Alton Russell (Nominated Principal Applicant), Rodolphe Thiébaut (Principal Applicant), Brian Custer (Co-Applicant), Kostas Pantopoulos (Co-Applicant), Chen-Yang Su (Co-Applicant), Ronél Swanevelder (Collaborator)
Biologically informed mechanistic modeling vs. machine learning for predicting iron recovery after blood donation
Role: Co-Applicant
Amount: $135,000 CAD
Rating and rank: NA (*Submitted and under review as of Mar 2023*)
- **Tasks:** Performed all preliminary analyses and generated the main figures and tables included in the proposal. Contributed to three sections of the proposal pertaining to statistical and machine learning risk prediction models, machine learning external validation, and mechanistic models.

WORK EXPERIENCE

Data Science Intern (Computer Vision Science Team), Hinge Health, Montreal, Canada   May 2022–Sep 2022
Manager: Colin Brown, Louis Harbour (Computer Vision Team).
Researched new advanced methods for exercise recognition and feedback (ERF): *Automatic Exercise Repetition Counting.* Hinge Health
Culminated in a technical report and dimensionality reduction codebase that will be integrated into the company's ERF pipeline.

Bioinformatics Co-op, Regeneron Pharmaceuticals, Tarrytown, New York, United States   *Declined*

Hiring Manager: Ayush Shekhar Saxena (Associate Scientist - Bioinformatics).

Offered a full-time (40 hours per week) Co-op position on the Molecular Profiling & Data Science Team from May 22 to Dec 15, 2023, to develop variant-calling bioinformatics pipelines. *The offer was declined due to a time conflict.*

RESEARCH EXPERIENCE

PhD Rotation Student, McGill University Health Centre, Montreal, Canada   Jan 2023–Apr 2023

3-month rotation working on evaluating policies to address colonoscopy wait times in Québec. Advisor: Dr. Alan Barkun (Departments of Medicine (Gastroenterology), Clinical Epidemiology and Biostatistics, Surgery)

PhD Rotation Student, McGill School of Population and Global Health, Montreal, Canada   Sep 2022–Dec 2022

3-month rotation working on post-donation iron recovery in repeat blood donors. Advisor: Prof. Alton Russell (Department of Epidemiology, Biostatistics and Occupational Health).

Research Assistant, Lady Davis Institute at the Jewish General Hospital, Montreal, Canada   Jun 2020–Aug 2020

Advisors: Dr. Sirui Zhou, Prof. Brent Richards (Faculty of Medicine, Departments of Medicine (Endocrinology), Human Genetics, and Epidemiology and Biostatistics).

Research Intern, Mila - Quebec Artificial Intelligence Institute, Montreal, Canada   Feb 2020–Aug 2020

Worked in Prof. Joelle Pineau's lab with Dr. Wonseok Jeon on research in Inverse Reinforcement Learning and imitation learning. Outcome: 1 conference paper (also accepted as a workshop paper).

Research Intern, McGill University, Montreal, Canada   Jan 2020–Apr 2020

Population genetics research combining high replicate genetic simulation with performant composite likelihood inference on admixture tract distributions to infer the history of admixed populations. Advisors: Dr. Ivan Kryukov, Prof. Simon Gravel. Outcome: semester project thesis

Research Volunteer, McGill University, Montreal, Canada   Aug 2019–Oct 2019

Supported a project on developing a polygenic risk score model to improve understanding of the role of genetics in complex diseases. Advisor: Prof. Yue Li

Research Intern, Kaohsiung Medical University, Kaohsiung, Taiwan   May 2019–Jun 2019

Investigated ligand-receptor binding relationships through molecular docking techniques and performed basic computer drug screening and computational analysis on novel drugs. Conducted modeling and simulation analysis on viral proteins with ChemOffice and Discovery Studio. Advisor: Prof. Ying-Ting Lin.

Research Assistant, McGill University, Montreal, Canada   May 2018–May 2020

Investigated the effect of cadherin isoforms on collective cell migration in endothelial cells. Combined wet lab experimental techniques (molecular cloning, time-lapse microscopy) & dry lab image analysis (edge detection, cell coordination) through MATLAB. Trained new lab members. Advisor: Prof. Arnold Hayer. Outcome: 2 semester project theses.

PROJECTS

Automatic Exercise Repetition Detection, Hinge Health, Montreal, Canada   May 2022–Sep 2022

Implemented a dimensionality reduction approach and proof of concept for automatic detection of exercise repetitions on synthetic exercise videos from Infinity AI as well as real-life videos. Exercises experimented on include the squat, standing side leg raise, standing hip extension, and side-lying leg raise. The project was performed as part of the larger goal of using a data-driven approach for exercise recognition and feedback during a summer internship at Hinge Health.

XPRIZE Pandemic Response Challenge, Competition, Montreal, Canada   Oct 2020–Mar 2021

$500K, four-month competition (link, news article) that focuses on the development of artificial intelligence and data-driven systems to predict COVID-19 infection rates and prescribe intervention plans that regional governments, communities, and organizations can implement to minimize harm when reopening their cities and restarting their economies. Worked in a team of 12 (media article) on model development to predict COVID cases and deaths in regions around the world. (Phase 1 paper, Phase 2 paper). Rank 1/104 teams for Phase 1, Phase 2 Finalist.

PREPRINTS

[P5] M. Thiebault, **C.-Y. Su**, A. Barkun, W. A. Russell, "Evaluating policies to address colonoscopy wait times in Quebec," (*In progress*).

[P4] **C.-Y. Su**, K. Pantopoulos, M. Janssen, R. Thiebaut, W. A. Russell, "Predicting iron recovery after blood donation - comparing machine learning and biology-informed modeling approaches," (*In progress*).

[P3] **C.-Y. Su**, A. Meulenbeld, H. Jagirdar, M. Janssen, W. A. Russell, "Development and external validation of a model predicting iron marker recovery after blood donation," (*In progress*).

[P2] **C.-Y. Su**, ..., J. B. Richards, "Dynamic Protein Quantitative Trait Loci: assessing how COVID-19 infection affects the genetic regulation of circulating proteins," (*In progress*).

[P1] G. Butler-Laporte, Y. Farjoun, T. Nakanishi, T. Lu, E. Abner, Y. Chen, M. Hultstrom, A. Metspalu, L. Milani, R. Magi, M. Nelis, G. Hudjashov, Estonian Biobank Research Team, S. Yoshiji, Y. Ilboudo, K. Liang, **C.-Y. Su**, ..., J. B. Richards, "HLA allele-calling with whole-exome sequencing finds 129 novel associations in 11 autoimmune diseases: a multi-ancestry analysis in the UK Biobank," **Nature Communications** (*Submitted Mar 2023*). (medRxiv)

PUBLICATIONS

☐ *Journal Articles* (* denotes equal contribution)

[J6] **C.-Y. Su***, S. Zhou*, E. Gonzalez-Kozlova*, ..., J. B. Richards, "Circulating proteins to predict COVID-19 severity," **Scientific Reports** (*Accepted*). (medRxiv)

[J5] I. Paranjpe, P. Jayaraman, **C.-Y. Su**, ..., G. N. Nadkarni, "Proteomic Characterization of Acute Kidney Injury in Patients Hospitalized with SARS-CoV2 Infection," **Communications Medicine** (*Accepted*). (medRxiv)

[J4] S. Yoshiji, G. Butler-Laporte, T. Lu, J. Willet, **C.-Y. Su**, ..., J. B. Richards, "Proteome-wide Mendelian randomization implicates nephronectin as an actionable mediator of the effect of obesity on COVID-19 severity," **Nature Metabolism** (2023). https://doi.org/10.1038/s42255-023-00742-w

[J3] G. Butler-Laporte, Y. Farjoun, Y. Chen, M. Hultstrom, K. Liang, T. Nakanashi, **C.-Y. Su**, ..., J. B. Richards, Increasing serum iron levels and their role in the risk of infectious diseases: a Mendelian randomization approach, **International Journal of Epidemiology**, 2023, dyad010, https://doi.org/10.1093/ije/dyad010

[J2] Y. Chen, T. Lu, I. Stewart, G. Butler-Laporte, T. Nakanishi, A. Cerani, K. Liang, **C.-Y. Su**, ..., J. B. Richards, Genomic atlas of the plasma metabolome prioritizes metabolites implicated in human diseases. **Nature Genetics** 55, 44–53 (2023). https://doi.org/10.1038/s41588-022-01270-1 [*Lady Davis Institute paper of the month* (link)]

[J1] G. Butler-Laporte, E. Gonzalez-Kozlova, **C.-Y. Su**, ..., J. B. Richards, The dynamic changes and sex differences of 147 immune-related proteins during acute COVID-19 in 580 individuals. **Clinical Proteomics** 19, 34 (2022). https://doi.org/10.1186/s12014-022-09371-z

☐ *Conference Papers*

[C1] W. Jeon, **C.-Y. Su**, P. Barde, T. Doan, D. Nowrouzezahrai, J. Pineau, "Regularized Inverse Reinforcement Learning," **ICLR 2021** (Spotlight Presentation, (Paper, Conference Presentation): 167/2977=5.57%)

☐ *Workshops*

[W1] W. Jeon, **C.-Y. Su**, P. Barde, T. Doan, D. Nowrouzezahrai, J. Pineau, "Regularized Inverse Reinforcement Learning," **NeurIPS Deep Reinforcement Learning Workshop (DRLW) 2020**. (Conference Presentation)

☐ *Peer Reviewed Abstracts*

[A9] **C.-Y. Su***, M. Thibault*, "Colonoscopy Wait Times in Quebec: Using Decision-Analytic Modeling to Bowel Your Way Out," McGill Family Medicine Research Conference 2023 (*Submitted*)

[A8] **C.-Y. Su**, H. Jagirdar, R. Swanevelder, K. van den Berg, P. Lethola, R. Cockeran, W. A. Russell, "Development and international external validation of a model predicting iron marker recovery after blood donation," INFORMS Healthcare Conference 2023 (*Submitted*)

[A7] **C.-Y. Su**, H. Jagirdar, R. Swanevelder, K. van den Berg, P. Lethola, R. Cockeran, W. A. Russell, "Development and international external validation of a model predicting iron marker recovery after blood donation," Society for Medical Decision Making 18th Biennial European Conference 2023 (*Submitted*)

[A6] **C.-Y. Su**, "Predicting iron recovery after blood donation," McGill Quantitative Life Sciences Research Day 2023.

[A5] **C.-Y. Su**, G. Butler-Laporte, S. Zhou, T. Nakanishi, J. B. Richards, "Determining the Dynamic Changes in the Genetic Regulators of Circulating Proteins during SARS-CoV-2 Infection," McGill Endocrine Retreat 2022.

[A4] **C.-Y. Su**, S. Zhou, E. Gonzalez-Kozlova, G. Butler-Laporte, E. Brunet-Ratnasingham, T. Nakanishi, W. Jeon, D. Morrison, L. Laurent, N. Kimchi, The Mount Sinai COVID-19 Biobank Team, J. Pineau, V. Mooser, N. D. Beckmann, E. Kenigsberg, E. Schadt, S. Kim-schulze, A. W. Charney, S. Gnjatic, D. E. Kaufmann, M. Merad, J. B. Richards, "Circulating proteins to predict adverse COVID-19 outcomes," American Society of Human Genetics 2021. *Peer reviewed*.

[A3] **C.-Y. Su**, S. Zhou, W. Jeon, V. Forgetta, J. Pineau, J. B. Richards, "Predicting COVID-19 Outcomes Using Proteomic Data," McGill Endocrine Retreat 2021.

[A2] **C.-Y. Su**, S. Zhou, W. Jeon, V. Forgetta, J. Pineau, J. B. Richards, "Predicting COVID-19 Outcomes Using Proteomic Data," 21st Annual McGill Biomedical Graduate Conference (AMBGC 2021). (Abstract Book pg. 55) (MJM Published Abstracts). *Peer reviewed*.

[A1] **C.-Y. Su**, S. Zhou, W. Jeon, V. Forgetta, J. Pineau, J. B. Richards, "Predicting COVID-19 Outcomes Using Proteomic Data," Rosalind and Morris Goodman Cancer Research Centre Annual Symposium 2021.

☐ *Thesis*

[T1] **C.-Y. Su**, "Identifying a proteomic signature for COVID-19 outcomes," M.Sc. Thesis. (Thesis)

TECHNICAL REPORTS

* denotes equal contribution

[T11] B. Cao*, C. Surbey*, **C.-Y. Su***, F. Kondrup*, J. Hong*, K. Song*, M. Jousse*, S. Moore*, X. Hua*, Analysis of Recruited Population Differences Between Healthy and Diagnosed Cohorts in Neuroimaging Studies, QLSC 600D2: Foundations of Quantitative Life Sciences, McGill University, Montreal, QC, Canada, Mar 2022. (Paper)

[T10] F. Kondrup*, **C.-Y. Su***, G. Merhi*, Investigation of the Relationships between Heart Rate, Premature Ventricular Contractions (PVCs), the Number of Intervening Sinus Beats (NIBs), and the Coupling Interval, QLSC 600D1: Foundations of Quantitative Life Sciences, McGill University, Montreal, QC, Canada, Oct 2022. (Paper)

[T9] **C.-Y. Su**, Automatic Exercise Repetition Counting in Exercise Recognition and Feedback, Summer Internship, Hinge Health, Montreal, QC, Canada, Aug 2022. *Supervised by Dr. Louis Harbour and Colin Brown*.

[T8] S. Bédard*, K. Prakash*, **C.-Y. Su***, Analysis of Twitter discussions around the movie Shang-Chi and the Legend of the Ten Rings, COMP 598: Introduction to Data Science, McGill University, Montreal, QC, Canada, Dec 2021. (Paper)

[T7] W. Li*, K. Sayar*, G. Shao*, **C.-Y. Su***, A Multi-Task Learning Approach for Classification of Faces, ECSE 552: Deep Learning, McGill University, Montreal, QC, Canada, Apr 2021. (Paper)

[T6] A. Williams*, B. Neal*, **C.-Y. Su***, D. Pernes*, M. Narsimhan*, M.-A. Rousseau*, M. Aleksandrova*, O. Bilaniuk*, P. Wankhede*, T. Nguyen*, XPRIZE Pandemic Response Challenge Phase 2, Feb 2021. (Phase 2 paper).

[T5] A. Williams*, B. Neal*, **C.-Y. Su***, D. Pernes*, M. Narsimhan*, M.-A. Rousseau*, M. Aleksandrova*, O. Bilaniuk*, P. Wankhede*, T. Nguyen*, XPRIZE - Pandemic Response Challenge Phase 1, Dec 2020. (Phase 1 paper).

[T4] **C.-Y. Su**, Inferring the History of Admixed Populations, COMP 401: Project in Biology and Computer Science, McGill University, Montreal, QC, Canada, April 2020. *Supervised by Dr. Ivan Kryukov and Prof. Simon Gravel*. (Paper)

[T3] **C.-Y. Su**, Regulation of Collective Endothelial Cell Migration by N-cadherin, BIOL 467: Independent Research Project 2, McGill University, Montreal, QC, Canada, April 2019. *Supervised by Prof. Arnold Hayer*. (Paper)

[T2] **C.-Y. Su**, Investigating the Role of Classical Cadherin Isoforms in the Control of Collective Cell Migration, BIOL 466: Independent Research Project 1, McGill University, Montreal, QC, Canada, December 2018. *Supervised by Prof. Arnold Hayer*. (Paper)

[T1] **C.-Y. Su**, Spatial Learning in Porcellio Scaber, the Common Sow Bug, International Baccalaureate: Extended Essay, July 2016. *Received 33 out of 36 possible points where 29 points is an A.*

POSTER CONFERENCE PRESENTATIONS

[PC6] "Predicting iron recovery after blood donation," **McGill Quantitative Life Sciences Research Day**, McGill University, Montreal, Canada, Jan 31, 2023. Poster Presentation.

[PC5] "Predicting COVID-19 outcomes using proteomic data," **McGill School of Computer Science 50th Anniversary Celebration**, McGill University, Montreal, Canada, Oct 21-22, 2022. Poster Presentation.

[PC4] "Circulating proteins to predict adverse COVID-19 outcomes," **American Society of Human Genetics** (Virtual), Oct 18-22, 2021. Poster Presentation. (*International*)

[PC3] "Circulating proteins to predict adverse COVID-19 outcomes," **CIFAR Deep Learning & Reinforcement Learning (DLRL) Summer School** (Virtual), Jul 26-31, 2021. Poster Presentation. (*International*)

[PC2] "Circulating proteins to predict adverse COVID-19 outcomes," **Summer Reasoning and Learning (RL) Lab Mini Conference**, McGill University (Virtual), Jun 17-18, 2021. Lightning talk (5 min).

[PC1] "Predicting COVID-19 outcomes using proteomic data," **21st Annual McGill Biomedical Graduate Conference (AMBGC 2021)**, Virtual, May 11, 2021. Poster Presentation. *Won 1st place under the "Genetics and Gene Expression" category* (poster).

OTHER TALKS AND PRESENTATIONS

[OT9] "Evaluating policies to address colonoscopy wait times in Québec, Canada", McGill Quantitative Life Sciences PhD Program, Mar 9, 2023. **Presentation**. *Presented my Winter 2023 research work to PhD students in the Quantitative Life Sciences PhD program. 15 min talk + 5 min questions.*

[OT8] "Using machine learning to manage risk of iron deficiency in repeat blood donors", McGill Quantitative Life Sciences PhD Program, Dec 8, 2022. **Three-minute thesis competition**. *Three-minute thesis competition for first-year Quantitative Life Sciences PhD program students. Ranking: 2nd place.*

[OT7] "Post-donation iron recovery modeling in repeat blood donors", McGill Clinical and Health Informatics Meeting, Dec 5, 2022. **Presentation**. *Presented my Fall 2022 research work to McGill Clinical and Health Informatics affiliated professors and trainees. 30 min talk + 5 min questions.*

[OT6] "Using machine learning to manage risk of iron deficiency in repeat blood donors", McGill Quantitative Life Sciences PhD Program, Nov 24, 2022. **Presentation**. *Presented my Fall 2022 research work to PhD students in the Quantitative Life Sciences PhD program. 15 min talk + 5 min questions.*

[OT5] "Dimensionality Reduction and Automatic Repetition Counting", Hinge Health, Sep 1, 2022. **Presentation**. *Presented my summer internship results to the computer vision science team (9 scientists). 80 min talk.*

[OT4] "Exercise Recognition and Feedback - Automatic Repetition Counting", Hinge Health, Aug 23, 2022. **Presentation**. *Presented a proof of concept to the CEO (Dan Perez) and the machine learning team (25 scientists) applying principal component analysis to the squat exercise to automatically count exercise repetitions. 10 min talk.*

[OT3] Computer Vision Reading Group, Hinge Health, Jul 4, 2022. **Presentation**. *Presented the paper "Applying a principal component analysis to movement coordination in sport" to the machine learning team ($\sim$ 25 scientists). 1-hour presentation. (slides).*

[OT2] "Dynamic Protein Quantitative Trait Loci," OAS1 Working Group Meeting, Virtual, Feb 25, 2022. **Presentation**. *Presented to major collaborators, researchers, and professors from Canada, UK, Germany, Sweden, and USA working on the association of the OAS1 gene with COVID-19 outcomes.*

[OT1] "Predicting COVID-19 outcomes using proteomic data," Icahn School of Medicine at Mount Sinai Proteomics Meeting, Virtual, Mar 18, 2021. **Presentation**. *Presented to major collaborators, researchers, and professors at Mount Sinai (New York) working on plasma proteomics of COVID-19.*

PEER REVIEW EXPERIENCE

Peer Review (FRQS Doctoral Scholarship Application), McGill University   Sep 2022
Peer reviewed an FRQS Doctoral Scholarship application (Applicant: Satoshi Yoshiji, M.D., Ph.D. Student in Human Genetics)

Peer Review (FAES 300: Independent Internship), McGill University   Sep 2022
Reviewed an internship report by an undergraduate student (Emily Richardson) - *The Effectiveness of Environmental, Social, and Corporate Governance (ESG) Impact Assessments* - written as part of their FAES 300: Independent Internship course.

SUMMER SCHOOLS AND PROGRAMS

[S6] Neuromatch Academy - Deep Learning (NMA-Deep Learning) (Virtual), Jul 11-29, 2022 (Declined). (Program)

[S5] Oxford Machine Learning (OxML) Summer School (Virtual), Jul 19-21, Aug 9-20, 2021. (Program). *"...15x more [applicants] than the number of seats that the school could offer; from 118 countries."*

[S4] Neuromatch Academy - Deep Learning (NMA-Deep Learning) (Virtual), Aug 2-20, 2021 (Declined). (Program)

[S3] CIFAR Deep Learning & Reinforcement Learning (DLRL) Summer School (Virtual), Jul 26-31, 2021. (Program)

[S2] STAQ Quantum Ideas Summer School, Duke University (Virtual), Jun 7-11, 2021. (Program). *Topics covered include: Fundamentals of Quantum Information, Quantum Algorithms, Trapped Ions, Superconductors, Spins in Semiconductors, Quantum Architecture, Quantum Error Correction.*

[S1] Quebec Scientific Entrepreneurship Program (QcSE), Online, May 19 - Sep 23, 2021. (Program)

TEACHING EXPERIENCE

Teaching Assistant, COMP 202: Foundations of Programming, McGill University   Sep 2022 - Dec 2022
Class size ~ 750 students. Held weekly office hours, led weekly live presentation sessions of 20 students, midterm exam invigilation of ~ 350 students, photocopy of midterm and final exams, assignment and student presentation grading, held midterm and final exam review tutorials, and graded final exams.

Volunteer Tutor, Pathways to Education (Pointe-Saint-Charles), Montreal, Canada   Jan 2022 - May 2022
3 hours a week of tutoring high school students (12 - 16 years) from low-income communities. Helped students with their homework (math and science), mentored them on career directions, and supervised them during sessions. Supervised three 1 hour sessions (20 students per session) per week (website).

Teaching Assistant, COMP 202: Foundations of Programming, McGill University   Sep 2021 - Dec 2021
Class size ~ 500 students. Lead three weekly one-hour live sessions of 20 students each (2 virtual and 1 in-person), graded student presentations and assignments, hosted weekly office hours, and held midterm and final exam review tutorials.

McMedHacks, Hackathon Judge, McGill University   Aug 2021
Invited as a judge for a 3-day Hackathon on deep learning in medical image analysis attended by 145 participants (30+ teams).

McMedHacks, Mentor, McGill University   Jun–Jul 2021
Mentor for 356 participants (38 countries) attending the Medical Imaging Analysis and Deep Learning in Python Workshop (website). Tasks: created assignments, curated and answered student questions during workshops, and hosted TA sessions.

SELECT MEDIA COVERAGE

☐ *Print*

AABB News Magazine, Article, "AABB Foundation Grant Recipient's Research Could Improve Donor Safety and Blood Supply With Risk-Based Iron Recovery Periods"   Jan 2023
AABB magazine mentioning work performed during my PhD. [online magazine pdf]

☐ *Online Articles*

Mila News, Article, "An interdisciplinary team led by Mila researchers reaches final round of global pandemic response challenge"   Mar 2021
Mila - Quebec AI Institute article on our team being selected as world finalists in the XPRIZE Pandemic Response Challenge. [article]

☐ *Other Articles*

McGill Reporter, Article, "Celebrating the women who inspire us"   Mar 2021
A short story celebrating my mother for International Women's Day at McGill [article]

SERVICE AND LEADERSHIP

Co-Curricular Record, McGill University   2019–Present
"McGill's Co-Curricular Record (CCR) is a document that recognizes a student's involvement in learning opportunities outside the classroom." (Co-Curricular Record).

Outreach Speaker, Hot Science, Cool Talks, McGill University   Jan 2023 - Present
Member of Hot Science/Cool Talks which allows McGill scientists to share their research and experience in science with the Montreal Community. Supervisors: Jacky Farrell (Science Outreach Program Advisor) and Megan Phillips (Science Outreach Educator) [Request a talk - *my talk is listed under Topics: Biology*].
Topic: Biology.
Audience: High School (Sec. III-V), CEGEP, adults. Length: 45-60 minutes (including questions).
Title: Using artificial intelligence for safer and more efficient blood donations.
Donating blood could help save a life, but donors may be at risk of side effects. Did you know that artificial intelligence (AI) is helping to make blood donations safer and more efficient? That's right, computers are getting in on the action! I will describe how, by looking at past donations, AI can help keep donors safe from negative health effects and enable them to donate blood more efficiently so that they can keep saving lives.

Property Manager, Montreal, Canada   Nov 2022 – Present
Manage and rent out parking spaces to tenants in the Downtown Montreal area. Responsible for advertising vacancies, maintenance of parking spaces, preparation of tenancy agreements, communication with tenants, negotiation and collection of rental income.

Scholarship Service - Provincial Doctoral Awards - FRQS, McGill University   Sep 2022
Answer scholarship applicant questions (email) related to FRQS scholarship application instructions, use of application portal, and writing tips for applications. Total number of applicants helped = 4: Revathi Sahajpal (PhD Candidate, School of Human Nutrition); Mari Shishikura (PhD Student, Neuroscience); Hussein Samhat (MSc Student, Epidemiology); Cherinet Osebo (PhD Student, Global Surgery). 3 hours.

Graduate Funding Panel - Graduate Orientation Fellowship Sessions - FRQS, McGill University   Aug 2022
Invited as a student speaker to give a 20 min presentation + 15 min Q&A during orientation week to 120+ incoming graduate students at McGill University on the FRQS application process and my own experience applying. Aug 24, 2022. (slides, recording).

Homeless Shelter Volunteer, Resilience Montreal   Feb 2022–May 2022
5 hours a week of assisting with preparing and serving meals, organizing and distributing clothing/hygiene product, and keeping the environment clean and safe (website).

Undergraduate Poster Showcase Mentor, Office of Science Education, McGill University   Mar 2022
Mentored an undergraduate student (Eleanor Reilly): supported them with poster creation and provided feedback on their presentation and poster - *Macdonald Student-run Ecological Garden (MSEG)*.

Clinic Volunteer and Shadowing, Jewish General Hospital, Endocrinology   Sep 2021–May 2022
3 hours a week of shadowing and assisting an endocrinologist in the clinic.

Mentor, Buddy Program, Mila - Quebec Artificial Intelligence Institute   Aug 2021

Mentored new international graduate students joining Mila in Fall 2021. Showed students around campus and acted as a guide and first point of contact.

Babysitter, Montreal, Canada   Aug 2021

In charge of taking care of two children aged 8 (female) and 6 (male). Responsibilities: feeding, changing clothes, monitoring and supervising closely while children play.

Conference Volunteer, International Conference on Machine Learning (ICML), Virtual   2020, 2021

Helped facilitate panel discussions, ran a virtual help desk, monitored speaker sessions and chats, guided participants to correct sessions. Helped run a 24-hour virtual coffee stand, solved any technical difficulties and reported problems to the supervisor in-charge. Monitored and oversaw virtual poster presentations and tutorials, ensuring there were no violations of the code of conduct and no technical problems.

Conference Volunteer, Conference on Neural Information Processing Systems (NeurIPS), Virtual   2020

Ran a virtual help desk, helped guide participants to correct sessions.

Conference Volunteer, 19th Annual Re$earch Money (R$) Conference, Virtual   2020

Acted as a chat concierge with tasks including: engaging with attendees and facilitating the chat, dropping hints in the chat for the conference game, pulling quotes from speakers and panelists for tweeting, moving questions from chats to Q&A sections, and directing attendees if they were in search of speaker bios and reports.

SSMU Representative, SKILLS21 Program Committee, McGill University, Montreal, Canada   Sep 2019–May 2020

Discussed with faculty leaders how to get undergrads more involved in self-development workshops. Proposed and categorized 9 new additional workshops for the program during tenure. Acted as a voice for all undergrads as a Students' Society of McGill University (SSMU) representative.

SSMU Representative, Teaching & Learning Services Working Group Committee, McGill University, Montreal,
Canada   Sep 2019–May 2020

Worked with directors and faculty representatives to determine how to allocate $4.6 million CAD to campus buildings. Acted as a voice for all undergrads as a Students' Society of McGill University (SSMU) representative.

Conference Volunteer, Montreal AI Symposium (MAIS), Montreal, Canada   2018, 2020

Volunteered over the course of a day to help attendees of the Montreal AI Symposium (In-person 2018; Virtual 2020). Tasks included: signing in and registering attendees, guiding participants to the correct venue, answering questions, and venue set-up and take-down.

Tzu Chi Foundation, Food Bank Volunteer, Vancouver, Canada   2014–2016

Leukemia and Lymphoma Society of Canada, Volunteer, Vancouver, Canada   Sep 2015–2016

Marpole Community Centre, Volunteer (birthday parties & kids' open gym), Vancouver, Canada   Dec 2014–Jun 2015

BMO Half Marathon, Volunteer, Vancouver, Canada   Feb 2015

Girls Basketball City Championships, Team Ambassador, Vancouver, Canada   Feb 2014–Mar 2014

VEX Robotics Competition, Volunteer, Vancouver, Canada   Jan 2014–Jun 2014

CERTIFICATIONS

Human Research SOP Training VI, Online - certificate   Dec 2022–Dec 2024

McGill Research Data Management Learning Program, Online - certificate   Sep 2022

2022 Kevin Mitnick Security Awareness Training, Online - certificate   Jun 2022

HIPAA: Hybrid Entities, Online - certificate   Jun 2022

Combating Fraud, Waste, and Abuse (FWA), Online - certificate   Jun 2022

YMCA Child Protection Policy and Procedures Orientation, Online - certificate   Oct 2021

Oxford Machine Learning Summer School, Virtual - certificate   Aug 2021

ICML Volunteer Certificate of Appreciation, Virtual - certificate 2020, certificate 2021   Aug 2020, Aug 2021

CIFAR Deep Learning and Reinforcement Learning Summer School, Virtual - certificate   Jul 2021

FRQ DIS-EN: QcSE Discovery, Quebec Scientific Entrepreneurship Program (QcSE), Montreal, Canada - certificate
Jun 2021

Personal Finance Essentials, McGill University Desautels Faculty of Management, Montreal, Canada - certificate   Aug 2020

PAST CERTIFICATIONS

Safe Use of Biological Safety Cabinets, McGill University, Montreal, Canada   May 2018–May 2021

Introduction to Biosafety, McGill University, Montreal, Canada   May 2018–May 2021

Hazardous Waste Management & Disposal, McGill University, Montreal, Canada   Jun 2018–Jun 2021

WHMIS, McGill University, Montreal, Canada   Aug 2018–Aug 2021

PERSONAL INFORMATION

Languages
English (native), Chinese Mandarin (native), Taiwanese (native), French (basic knowledge).

Hobbies
Table Tennis, Gymnastics, Running, Calisthenics, Swimming, Yoga, Poetry, Music Production.

Canadian Citizen, Taiwanese Citizen