

EDUCATION	<ul style="list-style-type: none"><li>◇ <b>University of Toronto</b> Honours B.Sc. w/High Distinction · Double Degree: Computer Science Specialist &amp; Mathematics Major SELECTED CS COURSES: COMPUTER VISION(100%), PROBABILISTIC LEARNING(95%), NLP(96%), DEEP LEARNING(91%) SELECTED MATH COURSES: DIFFERENTIAL GEOMETRY(97%), MEASURE THEORY(95%), ANALYSIS(91%)</li></ul>	2017-2022 CGPA: 3.94
RESEARCH	<ul style="list-style-type: none"><li>◇ <b>Optimal division of the genome into regions with cancer specific differences in mutation rates</b> <i>Young A, Chmura J, Park Y, Morris Q, Atwal G. Pac Symp Biocomput. 2020;25:274-285. PubMed PMID: 31797603.</i></li><li>◇ <b>Exploration for sparse MDP's: Maximizing information in learned latent spaces</b> <i>Chmura J, Burhani H, Shi X. ICML 2023 (under review)</i></li></ul>	
PATENTS	<ul style="list-style-type: none"><li>◇ <b>System and Method: Multi-Objective RL For Personalized Client Execution</b> <i>Azam M, Chmura J, Huang H, Yu Z. U.S. Patent Application No. 3195081.</i></li><li>◇ <b>Multi-Objective RL with Gradient Vaccine</b> <i>Azam M, Chmura J, Huang H, Yu Z. U.S. Patent Application No. 3198016.</i></li></ul>	
PROFESSIONAL EXPERIENCE	<ul style="list-style-type: none"><li>◇ <b>RBC Capital Markets, AI Lab</b> <i>AI Engineer</i> · Invented a measure of market impact grounded in optimal transport theory that attributes information leakage on exchanges using Wasserstein distances. · Formulated an end-to-end optimization adjusting our order routing policy based on divergence between agent state and market conditions. Deployed to production in CA &amp; US, trading over \$200MM. · Wrote a multi-threaded <i>KDB</i> tool that programmatically generates queries to market data gateways, unifying how datasets are generated, stored, and shared. · Worked on a low-latency, high-throughput service providing aggregated market features for inference.</li><li>◇ <b>RBC Capital Markets, AI Lab</b> <i>AI Engineer, Intern</i> · Worked on a novel multi-objective extension to proximal policy optimization that combines hindsight relabelling, gradient projections and alternative bellman operators. Applied to a new RL trading agent, this enabled few-shot adaptation to client-specific trading objectives at inference time. · Engineered features and designed reward functions based on optimal execution econometrics research. Performed rigorous simulation, testing and analytics preparing model for production. · Created a RL reading group, presented literature to broader teams on a bi-weekly basis.</li><li>◇ <b>Vector Institute for Artificial Intelligence</b> <i>Machine Learning Researcher</i> · Published an information theory driven dynamic programming algorithm for associating regional mutation density with cancer type by discovering patterns in chromatin state. · Investigated deep ensembles and gradient-based feature importance to better classify rare cancers. · Implemented a Kronecker-factored approximate second-order optimizer, and monte-carlo dropout to a cancer classifier.</li><li>◇ <b>Bibbit</b> <i>Full Stack Engineer</i> · Designed website for reading and publishing, recommendation system for personalized feed.</li><li>◇ <b>Fio Corp.</b> <i>Software Engineer, Intern</i> · Performed verification and validation of edge-based vision system for disease classification.</li></ul>	2022-Present  2020-2021  2019-2020  August 2018  August 2017
SCHOLARSHIPS & AWARDS	<ul style="list-style-type: none"><li>◇ <b>4x Deans List Scholar for Academic Excellence</b> <i>University of Toronto</i></li><li>◇ <b>3x Recipient of Louis Savlov Scholarship for Sciences</b> <i>University of Toronto</i></li><li>◇ <b>Ted Mossman Scholarship for Mathematics</b> <i>University of Toronto</i></li></ul>	2018-2022  2018-2020  2017
SELECTED PROJECTS	<ul style="list-style-type: none"><li>◇ <b>Project X 2020: Undegraduate AI Research Competition</b> <i>Research Team, University of Toronto AI.</i> Organized open source resources, summarized published research in infectious disease problem category.</li><li>◇ <b>Position Based Fluid Simulation</b></li><li>◇ <b>Morse Theory, Sard's Theorem, and Applications</b></li></ul>	