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| EDUCATION | <ul style="list-style-type: none">◇ University of Toronto Honours B.Sc. w/High Distinction · Double Degree: Computer Science Specialist & 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%), TOPOLOGY(93%), ANALYSIS(91%) | 2017-2022 CGPA: 3.94 |
| RESEARCH | <ul style="list-style-type: none">◇ Optimal division of the genome into regions with cancer specific differences in mutation rates <i>Young A, Chmura J, Park Y, Morris Q, Atwal G. Pac Symp Biocomput. 2020;25:274-285. PubMed PMID: 31797603.</i>◇ Exploration for sparse MDP's: Maximizing information in learned latent spaces <i>Chmura J, Burhani H, Shi X. TODO (under review)</i> | |
| PATENTS | <ul style="list-style-type: none">◇ System and Method: Multi-Objective RL For Personalized Client Execution <i>Azam M, Chmura J, Huang H, Yu Z. CA. Patent Application No. 3195081.</i>◇ Multi-Objective RL with Gradient Vaccine <i>Azam M, Chmura J, Huang H, Yu Z. CA. Patent Application No. 3198016.</i> | |
| PROFESSIONAL EXPERIENCE | <ul style="list-style-type: none">◇ RBC Capital Markets, AI Lab <i>AI Engineer</i> · Used off-policy evaluation and linear programming to reduce trading fees in order routing strategy. · Integrated routing changes into RL system and deployed to production in CA & US, trading over \$200MM. · Researched compression-based self-supervised objectives that accelerate learning in sparse reward MDP's. · Invented a market impact measure grounded in optimal transport theory that attributes information leakage on exchanges using Wasserstein distances. · Wrote a multi-threaded <i>KDB</i> tool that programmatically generates queries to market data gateways, unifying how training data is generated and shared. · Worked on a low-latency, high-throughput service providing aggregated market features for inference.◇ RBC Capital Markets, AI Lab <i>AI Engineer, Intern</i> · Developed a novel multi-objective actor-critic extension to PPO that combines hindsight relabelling, gradient projections and vectorized bellman operators enabling few-shot adaptation to client preferences. · Engineered features and designed reward functions based on optimal execution econometrics research. · Performed rigorous simulation, testing and statistical evaluation preparing model for production. · Created a RL reading group, presented literature to broader teams on a bi-weekly basis.◇ Vector Institute for Artificial Intelligence <i>Machine Learning Researcher</i> · Published an information-theoretic algorithm that reduces the number of mutations needed to discriminate cancer by finding genome segmentations that maximize mutual information with cancer type. · Investigated deep ensembles and gradient-based feature importance to better discriminate rare cancers. · Implemented monte-carlo dropout with a Kronecker-factored optimizer for cancer classification.◇ Bibbit <i>Full Stack Engineer</i> · Designed a website for reading and publishing, recommendation system for personalized feed.◇ Fio Corp. <i>Software Engineer, Intern</i> · Performed verification and validation of edge-based vision system for disease classification. | 2022-Present 2020-2021 2019-2020 August 2018 August 2017 |
| SCHOLARSHIPS & AWARDS | <ul style="list-style-type: none">◇ 4x Deans List Scholar for Academic Excellence <i>University of Toronto</i>◇ 3x Recipient of Louis Savlov Scholarship for Sciences <i>University of Toronto</i>◇ Ted Mossman Scholarship for Mathematics <i>University of Toronto</i> | 2018-2022 2018-2020 2017 |
| TALKS | <ul style="list-style-type: none">◇ Learning Feature Importance for a Deep Learning Cancer Classifier <i>Undergraduate Summer Research Program</i> | 2019 |
| SELECTED PROJECTS | <ul style="list-style-type: none">◇ Project X 2020: Undergraduate AI Research Competition <i>Research Team, University of Toronto AI.</i> Organized open source datasets and summarized published AI research in infectious diseases.◇ Position Based Fluid Simulation◇ Morse Theory, Sard's Theorem, and Applications | |