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www.brydon.ai

Brydon Eastman, Ph.D.

Thinking Machines Lab Inc
San Francisco, CA

WORK EXPERIENCE

Thinking Machines Lab Inc, San Francisco, CA — *Founding Team*

February 2025 - Present

I am a researcher on the founding team of Thinking Machines Lab Inc.

OpenAI, San Francisco, CA — *Member of Technical Staff*

January 2023 - February 2025

I was a researcher working on various projects related to human and synthetic data, reasoning, reinforcement learning, and agents with large language models. Contributed to the browsing, plugins, 4o, o1, o3, and deep research projects, among others.

MinervaAI, Toronto, ON — *Machine Learning & Data Science Lead*

October 2022 - July 2023

I designed and oversaw the implementation of various natural language processing models to assist in the anti-money laundering and know-your-client/know-your-business efforts at MinervaAI. My responsibilities also included the hiring and assistance in the training of a Senior Data Scientist.

University of Waterloo, Waterloo, ON — *Sessional Instructor*

September 2019 - August 2022

Sessional instructor for various Mathematics courses. More information in the Teaching section below.

EDUCATION

University of Waterloo, Waterloo, ON — *Ph.D. Applied Mathematics*

September 2017 - May 2022
Thesis: *Machine Learning Techniques and Stochastic Modeling in Mathematical Oncology*

Pursued a Ph.D. in applied mathematics and machine learning in mathematical biology under the supervision of Mohammad Kohandel. GPA 93%

McMaster University, Hamilton, ON — *M.Sc. Mathematical Biology*

September 2015 - August 2017
Thesis: *Sensitivity to Predator Response Functions in the Chemostat*

Pursued a master's of science in mathematical biology under the supervision of Gail Wolkowicz. GPA 11.2/12

Redeemer University, Hamilton, ON — *Hon B.Sc. Mathematics and Computer Science*

January 2011 - April 2015
Thesis: *Pentadiagonal Companion Matrices*

Completed a double major in honours Mathematics and four-year Computer Science. GPA 11.6/12

AWARDS & HONOURS

Outstanding Teaching Assistant Award x2 $500x2
Applied BioMath Poster Award $250
Queen Elizabeth II - Graduate Scholarship in Science and Technology $15,000
Ping Yang Memorial Graduate Scholarship $5,000
NSERC Canadian Graduate Scholarship Doctoral $105,000
NSERC Canadian Graduate Scholarship Masters $17,500
NSERC Ontario Graduate Scholarship Masters $15,000
Milos Novotny Fellowship $4,000
NSERC Undergraduate Research Award $24,500
Board of Governor's Scholarship $14,400
Featured twice in LEGO Magazine

PUBLICATIONS

Universal Physics-Informed Neural Networks: Symbolic Operator Discovery with Sparse Data. ArXiV Preprint *April 4, 2023*
Lena Podina, **Brydon Eastman**, and Mohammad Kohandel.

A comparison and calibration of integer and fractional order models of COVID-19 with stratified public response Mathematical Biosciences and Engineering *Sept 1, 2022*
Somayeh Fouladi, Mohammad Kohandel, **Brydon Eastman**

Reinforcement learning derived chemotherapeutic schedules for robust patient-specific therapy Nature Scientific Reports *Sep 9, 2021*
Brydon Eastman, Michelle Przedborski, Mohammad Kohandel

Modeling the impact of public response on the COVID-19 pandemic in Ontario PLoS One *Apr 14, 2021*
Brydon Eastman, Cameron Meaney, Michelle Przedborski, Mohammad Kohandel

A Predator-Prey Model in the Chemostat with Holling Type II Response Function Mathematics in Applied Sciences and Engineering *Nov 1, 2020*
Tedra Bolger, **Brydon Eastman**, Madeleine Hill, Gail S. K. Wolkowicz

The effects of phenotypic plasticity on the fixation probability of mutant cancer stem cells Journal of Theoretical Biology *Oct 21, 2020*
Brydon Eastman, Dominik Wodarz, Mohammad Kohandel

From Solid-State NMR to Crystal Structures through Combinatorial Tiling Theory Int. Union Crystallography *Jan 1, 2018*
Darren Brouwer, Janelle Vanderhout, Chelsey Hurst, **Brydon Eastman**

Pentadiagonal Companion Matrices Special Matrices *Oct 28, 2015*
Brydon Eastman and Kevin N. Vander Meulen

Sparse Spectrally Arbitrary Patterns The Electronic Journal of Linear Algebra *Apr 28, 2015*
Brydon Eastman, Bryan Shader, Kevin N. Vander Meulen

Companion Matrix Patterns Linear Algebra and its Applications *Feb 1, 2014*
Brydon Eastman, I.-J. Kim, B.L. Shader, K.N. Vander Meulen

PRESENTATIONS

Lena Podina, **Brydon Eastman**, and Mohammad Kohandel. 2023. "Poster: Universal Physics-Informed Neural Networks: Symbolic Operator Discovery with Sparse Data" International Conference on Machine Learning. International Conference.

Brydon Eastman. 2023. Invited Talk: LLMs and Education: An Insider's look at ChatGPT Redeemer University.

Lena Podina, **Brydon Eastman**, and Mohammad Kohandel. 2022. "Poster: A PINN Approach to Symbolic Differential Operator Discovery with Sparse Data" Neural Information Processing Systems. International Conference.

Brydon Eastman, Michelle Przedborski, and Mohammad Kohandel. 2021. "Poster: Reinforcement learning derived chemotherapeutic schedules for robust patient-specific therapy given unknown patient response parameters." Society of Mathematical Biology Annual Meeting. International Conference.

Brydon Eastman. 2021. "Contributed Talk: Reinforcement learning derived chemotherapeutic schedules for robust patient-specific therapy." Workshop in Mathematical and Computational Biology. International Conference.

Brydon Eastman. 2019. "Invited Talk: Contrasting chemotherapy schedules from reinforcement learning and optimal control." Canadian Mathematics Society: Winter Meeting. National Conference.

Brydon Eastman, Tedra Bolger, Madeleine Hill, and Gail Wolkowicz. 2016. "Poster: Predator Response Functions in the Chemostat: A Cautionary Tale" Canadian Mathematics Society: Winter Meeting. National Conference

Brydon Eastman. 2015. "Contributed Talk: Sex, Drugs, and Mathematics: Using Evolutionary Algorithms to Interpret Pharmaceutical NMR Data." Canadian Undergraduate Math Conference. National Conference.

Brydon Eastman, Brouwer, D. 2015 "Poster: A Genetic Algorithm for NMR Crystallography of Materials with Multispin Networks" MOOT 2015. Provincial Conference. Poster Presentation.

Brydon Eastman, Brouwer, D, Vander Meulen, K. 2014. "Poster: Solving Crystal Structures using Delaney Graphs derived from NMR Spectra" McMaster Chemistry Research Symposium. Institutional Conference. Poster Presentation.

Brydon Eastman 2014. “Contributed Talk: Solving Crystal Structures using Delaney Graphs derived from NMR Spectra” Conference on Graph Theory, Matrix Theory, and Interactions. International Conference.

Brydon Eastman 2013. “Contributed Talk: Companion Matrix Patterns” Canadian Undergraduate Math Conference. National Conference.

TEACHING

2022 **Instructor** AMATH 353, *University of Waterloo*
Partial Differential Equations I
2020 **Instructor** MATH 137, *University of Waterloo*
Calculus I for Honours Computer Science students
2019 **Instructor** MATH 116, *University of Waterloo*
Calculus I for Architecture Engineering Students
2022 **Teaching Assistant** AMATH 250, *University of Waterloo*
Differential Equations
2021 **Teaching Assistant** AMATH 350, *University of Waterloo*
Differential Equations (Winter and Fall 2021)
2019-2020 **Teaching Assistant** Calculus I, Calculus III, and Linear Algebra *University of Waterloo*
2018 **Teaching Assistant** MATH 117, *University of Waterloo*
Led two tutorial sections of Calculus I for Engineering Students
2015-2017 **Teaching Assistant** Scientific Computing, Graph Theory, Various Calculus courses, and assisted in the Math Help Centre
2013 **Instructor**, *Dundas Valley Highschool Co-Op* Instructor for a Grade 11 Physics Course
2015-2017 **Lab Assistant**, *Redeemer University* First-year physics lab assistant
2011-2015 **Teaching Assistant**, *Redeemer University* TA for two computer science courses and was part of the university’s tutor program for various mathematics courses.

CREDENTIALS & AFFILIATIONS

2019 **Fundamentals of University Teaching** *University of Waterloo*, Centre for Teaching Excellence
2020-Present **Member**, Society for Mathematical Biology
2021-Present **Elected Member**, Sigma Xi Scientific Research Honour Society

STUDENT SUPERVISION

2021 Somayeh Fouladi (Co-Supervised Visiting Ph.D. Research Project)

COMMUNITY SERVICE

Open Source Contributor

Contributed to Keras Tuner, an open-source automated machine learning platform built on Tensorflow

Reviewer

Performed peer review for the following journals: Journal of Computational Biology, iScience, PLOS One, PeerJ, Journal of Biomedical and Health Informatics, Mathematical Biosciences