Zhengyu Brian Li

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Education

Georgia Institute of Technology Expected 2023 - 2028
PhD in Computer Science - Machine Learning + Formal Methods for AI *GPA: 4.0*

University of Waterloo 2022 - 2023
Master of Mathematics in Computational Mathematics *GPA: 3.7*

University of Toronto 2018 - 2022
Honour Bachelor of Science in Mathematics *GPA: 3.6*

Work Experience

Machine Learning Research Intern May 2023 – September 2023
Phenomic AI *Toronto, Canada*

- Led a project to enhance spatial gene expression analysis using deep learning techniques, demonstrating improvements over traditional methods in both accuracy and efficiency.
- Adapted and applied principles from ControlNet and GAN architectures to develop machine learning algorithms, improving spatial transcriptomics data interpretation and advancing automated cell-type labeling.

Data Science and Advanced Analytics Intern May 2022 – September 2022
TD Insurance *Toronto, Canada*

- Developed and implemented a sophisticated predictive model using machine learning and PCA on large-scale customer data, improving service efficiency by 40%, while optimizing the data pipeline to increase decision-making reliability by 80%.
- Conducted in-depth analysis of customer satisfaction data, presenting key insights to executives that informed strategic initiatives, resulting in a 60% increase in customer satisfaction rates as measured by follow-up surveys.

Teaching and Extracurriculars

Teaching Assistant September 2020 – September 2024
Georgia Tech, University of Toronto, University of Waterloo *Toronto, Canada*

- Conducted teaching responsibility for Artificial Intelligence (Georgia Tech), Algebra (Waterloo), Graph theory and combinatorics (Toronto), etc.

President May 2020 – April 2022
University of Toronto Society of Mathematics and Computational Sciences *Toronto, Canada*

- Led a 20-person team in executing large-scale events (1000+ participants), including Toronto's major Hackathon, while negotiating partnerships with 80+ organizations, resulting in 90% job offer rate for attendees, 25% membership growth, and 50% cost reduction through data-driven strategy.

Founding President May 2019 – April 2021
University of Toronto Society for Algorithmic Modelling *Toronto, Canada*

- Founded and led the Society for Algorithmic Modelling (UTMSAM) as President, growing membership to 1000+ students in one year through innovative initiatives in data science, machine learning, and applied mathematics; managed a team of 10 executives to organize workshops, seminars, and conferences.

Notable Publications

Li, Z., et al. (2024). "A SAT Solver + Computer Algebra Attack on the Minimum Kochen–Specker Problem." *Accepted to **IJCAI 2024** (15% acceptance rate).*

Conor, D., Li, Z., et al. (2024). "A SAT Solver + Computer Algebra Attack on the Minimum Kochen–Specker Problem." *Accepted to **AAAI 2024**.*

Conor, D., Li, Z., Bright, C., Ganesh, V., (2024). "A SAT + Computer Algebra System Verification of the Ramsey Problem R(3, 8)." *Accepted to **AAAI 2024**.*

Shi, B., Patel, M., Yu, D., Yan, J., Li, Z., Petriw, D., ... & Howe, J. Y. (2022). "Automatic quantification and classification of microplastics in scanning electron micrographs via deep learning." **Science of The Total Environment**