Ryan Shi

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Education

University of Toronto — Toronto, ON
BSc: Data Science — *Sep. 2021 – Jun. 2025*

- **Courses:** Data Science I & II; Computational Genomics and Bioinformatics; Algorithm Design, Analysis & Complexity; From Genes to Organisms; Introduction to Machine Learning; Methods of Data Analysis I & II
- **Awards:** University of Toronto Scholar, J. S. Maclean Scholarship, Dean's List

Experience

Research Student — May. 2024 – Present
Department of Statistical Sciences, University of Toronto — *Toronto, ON*

- Studied the spatial distributions of brain metastases using 3D point process models and cluster analysis
- Supported by the NSERC Undergraduate Student Research Award

Work Study Student — May. 2024 – Present
Acceleration Consortium, University of Toronto — *Toronto, ON*

- Helped to develop a prototype automated laboratory for organoid and stem cell culture analyses
- Reviewed recent advances in high-throughput imaging pipelines and orchestration of computer systems

Teaching Assistant — Sep. 2023 – Apr. 2024
Department of Mathematics, University of Toronto — *Toronto, ON*

- Led tutorials of up to 70 people, held office hours, marked assignments, and invigilated exams for first year calculus courses in two faculties

Textbook Design Assistant — May 2023 – Aug. 2023
Department of Mathematics, University of Toronto — *Toronto, ON*

- Edited textbook content and materials for a proof-based multivariable calculus course
- Created homework questions, answer keys, and chapter layouts using LaTeX, Perl, and WeBWorK

Research Student — Oct. 2022 – Mar. 2023
Azrieli Adult Neurodevelopmental Center, Center of Addiction and Mental Health — *Toronto, ON*

- Cleaned EEG data for a project using the PAS-TMS paradigm to assess neuroplasticity and identify biomarkers associated with autism spectrum disorder

Course Projects

Data Science II | *R* — Mar. 2024 – Apr. 2024

- Identified reliable predictors of health complications following surgery in Medicare hospitals using generalized linear models, random forests, and XGBoost

Introduction to Machine Learning | *Python, NumPy, Matplotlib, PyTorch* — Jul. 2023 – Aug. 2023

- Extended an item response theory model for a matrix completion problem in the context of personalized education

Data Science I | *Python, pandas, NumPy, Matplotlib* — Mar. 2023 – Apr. 2023

- Created an NLP logistic regression model to predict sentiments on X / Twitter using tweet metadata only

Software Design | *Java, Git* — Sep. 2022 – Dec. 2022

- Created a lightweight social application using clean architecture and object-oriented programming paradigms

Technical Skills

Languages: R, Python, Java, C, SQL, LaTeX, Bash, Perl, HTML/CSS
Developer Tools: Git/GitHub, VS Code, RStudio, Jupyter Notebook, Google Colab, MATLAB
Libraries: Tidyverse, pandas, NumPy, SciPy, Matplotlib, sklearn, PyTorch

Extracurriculars

Licentiate & Associate Diplomas of the Royal Conservatory in Piano — Aug. 2021 & Apr. 2019