Ryan Shi

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Education

HBSc in Data Science, Statistics Sep. 2021 – Jun. 2025
University of Toronto *Toronto, ON*

- **GPA:** 3.93/4.00, **Courses:** Biochemistry I & II, Computational Genomics and Bioinformatics, Neural Networks

Experience

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

- Modeled the spatial distributions of brain metastases using 3D point patterns and cluster analysis
- Developed methods for random sampling of points to assess deviations from complete spatial randomness

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

- Implemented ConvNet and Siamese network pipelines for analyzing organoid and stem cell cultures with robotics
- Reviewed recent advances in high-throughput computer vision and workflow management 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, invigilated exams for calculus courses

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 | *PyTorch, NumPy, Matplotlib* Jul. 2023 – Aug. 2023

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

Data Science I | *scikit-learn, pandas, NumPy, Matplotlib* Mar. 2023 – Apr. 2023

- Created an NLP logistic regression model to predict blogging sentiments using only metadata

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: PyTorch, Tidyverse, scikit-learn, pandas, NumPy, SciPy, Matplotlib

Extracurriculars

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