Bokuan Li

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https://jerrylicious.me

Education

McGill University Montréal, Canada
Honours Mathematics and Computer Science (B.Sc.) 2023.08 - 2026.05 *(expected)*
GPA: 3.98/4.0

Research Interests

Functional Analysis, Partial Differential Equations, Spectral Theory, Riemannian Geometry.

Research Experience

Critical Valuations for the Multivariate Tutte Polynomial
Supervisor: Professor Dmitry Jakobson 2025.05 - 2025.08

- Studied spectral graph theory, matroid theory, and Lorentzian polynomials.
- Numerically computed and analysed the critical and maximal weights for algebraic connectivity, Laplacian determinant, girth, and the multivariate Tutte polynomial on graphs.
- Characterised the critical and maximal valuations of the multivariate Tutte polynomial.
- Learned differential geometry and spectral theory.

Awards and Honors

Undergraduate Student Research Award | NSERC | *$8950* 2025.05

14th Place in North East Region | ICPC NA East Division 2024 2024.09

- Solved programming challenges as a team.

Wing Hing Chan Scholarships in Science | McGill University | *$1000* 2024.09

- Outstanding academic performance in Math and Computer Science.

Dean's Honour List | McGill University 2024.09

Major Entrance Scholarship | McGill University | *$5000/Year* 2023.09 - 2026.05

- Academic excellence and demonstrated leadership.

Academic Experience

Course Assistant for Measure Theory | McGill University | Montréal, Canada 2025.09 - 2025.12

- Provided detailed written feedback on student assignments.
- Facilitated student learning through consultation and assignment-related inquiries.
- Addressed common conceptual errors and mistakes.

Dry Lab Member | iGEM McGill | Montréal, Canada 2023.11 - 2024.08

- Led architectural design and integrated components for the team's software for strand-displacement reaction-based DNA computing.
- Nominated for the Best Software Tool Award among 195 undergraduate teams.

Peer Tutor | Marianopolis College | Montréal, Canada 2023.01 - 2023.05

- Provided personalised help in mathematics for peers in need.
- Created study plans for tutees to improve autonomously.

Executive | Marianopolis AI Club | Montréal, Canada 2021.08 - 2023.05

- Taught programming and machine learning lessons to a club of fifty students.
- Created an educational game for club members to learn and compete.

Selected Projects and Presentations

Digital Garden: Personal Repository for Mathematical Knowledge.

Probability Task Paper: Proofs of Relevant Theorems from Class.

Theory of Linear PDEs: Presentation Notes for Interest Group in Summer 2025.

Skills

Languages: English, Chinese.

Programming: LaTeX, Java, Python, HTML, CSS, TypeScript.

Course Work: Functional Analysis, Ordinary and Partial Differential Equations, Probability Theory, Measure Theory, General Topology, Algebraic Topology, Abstract Algebra, Linear Algebra, Graph Theory.