# Jiajun Zhang

(438) 351-3339 • zhangjohnson729@gmail.com • https://johanssonrein.github.io/

## EDUCATION

**Bachelor of Science in Honors Applied Mathematics**
McGill University 2022-2026
Undergraduate Research Thesis : Analysing Incident and Prevalent Cohort Survival Data
Research Supervisor: Professor Masoud Asgharian

## UNDERGRADUATE COURSEWORK

- 4 semesters of calculus (Single Variable Differential Calculus; Single Variable Integral Calculus; Multi-Variable Calculus and Advanced Calculus)
- 4 semesters of real analysis (Single Variable Real Analysis I, II; Measure Theory and Lebesgue Integration theory; Functional analysis)
- 1 semester of complex analysis
- 2 semesters of linear algebra
- 2 semesters of abstract algebra
- 2 semesters of differential equations (ODE and PDE)
- 3 semesters of probability theory and statistics
- A list of statistics oriented courses: Regression and ANOVA; Sampling Theory; Deep Learning and Neural Networks
- A list of additional mathematics topics that I am interested: Graph Theory; Numerical Analysis; Dynamical Systems

## RESEARCH INTERESTS

My research interests are in Mathematical Statistics and Biostatistics. I am especially interested in the field of survival analysis. I would like to further study multi-states models and investigate survival analysis alongside with causal inference.

## RESEARCH EXPERIENCE

**Honors Research Project**
McGill University 2025.2 - 2025.8
Research Title: Analysing Incident and Prevalent Cohort Survival Data
Research Supervisor: Professor Masoud Asgharian

- I provided a theoretical approach and served as an introduction to survival analysis, where I studied different estimating techniques for the survival function and hazard function with parametric; non-parametric and semi-parametric inference, and hypothesis testing.
- Some further topics like Bayesian approach to survival analysis; survival analysis with causal inference, etc. are under my current research interest.

**Undergraduate Independent Project**
McGill University 2025.3 - 2025.4
Project Title: Introduction to Circular Restricted Three-Body Problem
Project Supervisor: Professor Antony R. Humphries

- I studied the orbits and the stability of different Lagrange points of a circular restricted three-body problem. This independent research was my final project presentation for the graduate level course in dynamical systems.

## TEACHING AND MENTORING EXPERIENCE

**Undergraduate Mathematics Tutor**
McGill University 2024.9 - 2025. 5
Supervisor: Jerome Fortier

- I work as a math tutor at Burnside Building 911 . This position is aimed for answering students' questions from a wide variety of math courses which they are having troubles with. I hold weekly office hours and will answer questions from students that are present.

**Undergraduate Teaching Assistant: MATH 248 Honors Vector Calculus**
McGill University 2024.9 - 2024. 12
Course Lecturer: Professor Jean-Pierre Mutanguha

- I serve as the only undergraduate teaching assistant for this course
- Help to grade students' homework and provide timely feedback to the professor.

**Undergraduate Teaching Assistant: MATH 223 Linear Algebra**
McGill University 2023.9 - 2024.4
Course Lecturer: Professor Mikael Pichot

- I serve as an undergraduate teaching assistant for two consecutive semesters.
- Help to grade student' homework and provide timely feedback to the professor.

## HONORS AND AWARDS

**Tomlinson Undergraduate Award** 2025.3
McGill University
Award nominated to undergraduate teaching assistants with excellent performance.

**Tomlinson Undergraduate Award** 2024.10
McGill University
Award nominated to undergraduate teaching assistants with excellent performance.

## PAPERS

Jiajun, Z. (2025). *Analysing Incident and Prevalent Cohort Survival Data*.
Jiajun, Z. (2025). *Introduction to Circular Restricted Three-Body Problem*.

## PROJECTS

**Math Resources Website** 2024 - Present

- I have established my own website using github: https://johanssonrein.github.io/publications/ During my undergraduate degree.
- I use LaTeX, Markdown, HTML combined to write my own notes for core mathematics courses: Calculus, Linear algebra, Real analysis, Differential Equations, Probability, Statistics. More notes are still under construction.
- The goal of my website is to provide free math resources for undergraduate students and help them learn.

**My Own Video Channel** 2022 - Present

- I run my own video channel on Bilibili, a Chinese online video platform just like YouTube, and I upload videos and have around 6K subscribers (in 2025.7).
- My videos there mainly focus on mathematics subject in Gaokao (Chinese College Enterance Examination) and elementary university-level mathematics including linear algebra and calculus (all recorded in Chinese).
- My account page: Subscribe Me

## TECHNICAL SKILLS

LaTeX, Github, R, Python, Java, Mac OS, Windows

## LANGUAGES

Mandarin (Native), English (Proficient), French (Intermediate)