Jiaxuan Chen

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Shanghai World Foreign Language Academy
Department of International Baccalaureate Middle Years Programme (IB-MYP)
Shanghai, P.R.China

University of Alberta
Undergraduate Open Studies
Edmonton, Alberta, Canada

Education

- **Shanghai World Foreign Language Academy** — *September 2023 - June 2030 (planned)*
  International Baccalaureate Middle Years Programme (IB-MYP) — Shanghai, P.R.China
- **University of Alberta** — *September 2025 - March 2026*
  Undergraduate Open Studies — Edmonton, Alberta, Canada
- **University of California Berkeley** — *January 2026 - May 2026*
  Spring Semester Visiting Student — Berkeley, CA, USA
- **Stanford Univeristy** — *September 2025 - June 2026*
  Pre-Collegiate University-Level Maths and Physics (ULO) — Redwood City, CA, USA
- **State University of New York at Stony Brook** — *January 2026 - May 2026*
  Winter & Spring Semester Visiting Student — Stony Brook, NY, USA

Credit Courses and Programs

Mathematics

- **AS.110.413 Introduction to Topology (expected)** — *January 2026 - May 2026*
  Mathematics Department, John Hopkins University
  ◦ Undergraduate-level
- **AS.110.435 Introduction to Algebraic Geometry (expected)** — *January 2026 - May 2026*
  Mathematics Department, John Hopkins University
  ◦ Undergraduate-level
- **XM615 Real Analysis (expected)** — *January 2026 - May 2026*
  Mathematics Department, Stanford Pre-Collegiate University-Level Online Math & Physics, Stanford Pre-Collegiate Studies, Stanford University
  ◦ Undergraduate-level
- **XM522 Multivariable Integral Calculus (expected)** — *January 2026 - May 2026*
  Mathematics Department, Stanford Pre-Collegiate University-Level Online Math & Physics, Stanford Pre-Collegiate Studies, Stanford University
  ◦ Undergraduate-level
- **XM531 Differential Equations (expected)** — *January 2026 - May 2026*
  Mathematics Department, Stanford Pre-Collegiate University-Level Online Math & Physics, Stanford Pre-Collegiate Studies, Stanford University
  ◦ Undergraduate-level
- **XM542 Number Theory (expected)** — *January 2026 - May 2026*
  Mathematics Department, Stanford Pre-Collegiate University-Level Online Math & Physics, Stanford Pre-Collegiate Studies, Stanford University
  ◦ Undergraduate-level

- **MATH 423 Differential Geometry (expected)** *January 2026 - May 2026*
  Mathematics Department, University of Illinois Urbana-Champaign
  ◦ Undergraduate-level

- **AMS 545 Computational Geometry (expected)** *January 2026 - May 2026*
  Applied Mathematics and Statistics Department, New York State University at Stony Brook
  ◦ Graduate Level

- **XM511 Linear Algebra** *August 2025 - December 2025*
  Mathematics Department, Stanford Pre-Collegiate University-Level Online Math & Physics, Stanford Pre-Collegiate Studies, Stanford University
  ◦ Undergraduate-level
  ◦ Instructor: Dr. Margarita Kanarsky

- **XM521 Multivariable Differential Calculus** *August 2025 - December 2025*
  Mathematics Department, Stanford Pre-Collegiate University-Level Online Math & Physics, Stanford Pre-Collegiate Studies, Stanford University
  ◦ Undergraduate-level
  ◦ Instructor: Dr. Leonardo Paulo Guimaraes De Assis

- **IM160 Discrete Mathematics** *August 2025 - December 2025*
  Mathematics Department, Stanford Pre-Collegiate University-Level Online Immersive, Stanford Pre-Collegiate Studies, Stanford University
  ◦ Undergraduate-level
  ◦ Instructor: Dr. Dana Paquin

Humanities

- **PHIL108 Logical and Critical Reasoning** *January 2026 - January 2026*
  Philosophy Department, State University of New York at Stony Brook, USA
  ◦ Undergraduate-level

- **LING101 Introduction to Linguistics Analysis** *September 2025 - December 2025*
  Linguistics Department, University of Alberta, Canada
  ◦ Undergraduate-level
  ◦ Instructor: Dr. Martin Guardado
  ◦ Grade: 87/100
  ◦ Letter Grade: A-
  ◦ Grade Points: 3.7/4.0

Academic Research and Publications

Jiaxuan Chen's Google Scholar Homepage

- **AI Model Collapse in Recursive Training** *October 2025 - November 2025*
  Mentor: Independent
  ◦ Subjects: Data Science - Machine Learning; Mathematical Analysis - Ordinary Differential Equations.
  ◦ Receives Outstanding Award in SCUDEM X 2025.

- **Optimization of Emergency Evacuation Sweeping Plan** *November 2025*
  Mentor: Independent
  ◦ Subject: Mathematical Modeling, Computer Science

- **Magic Positivity** *September 2025 -*
  Mentor: Prof. Dana Paquin, Mathematics Department, California Polytechnic State University
  ◦ Subject: Discrete Mathematics - Geometric Number Theory, Earhart Theory, Matroid Theory

- **Optimizing Shanghai's Household Waste Recycling Collection Program by Decision-Making based on Mathematical Modeling** *January 2025 - February 2025*
  Mentor: Independent

◦ Subject: Mathematical Modeling, Computer Science

[2025] Jiaxuan Chen, Ling Zhou Shen, Jinchen Liu (2025). **Optimizing Shanghai's Household Waste Recycling Collection Program by Decision-Making based on Mathematical Modeling**. *arXiv preprint*, https://doi.org/10.48550/arXiv.2507.03844 [cs.CY]

Published in Journal of Earth and Environmental Waste Management

SKILLS

- **Programming Languages:** Python, C++, R
- **Data Science & Machine Learning:** Social Scientific Data Analysis, Regression, Deep Learning, Mathematical Modeling
- **Areas of Interest:** Mathematics, Computer Science, Data Science, Philosophy, Logic
- **Mathematical & Statistical Tools:** MATLAB, Wolfram Mathematica, GeoGebra, Desmos, Stata
- **Language:** English (Fluent), Chinese Mandarin(Fluent), French (Intermediate), German (Elementary), Spanish (Elementary), Latin (Elementary

REFERENCES

Available upon request.