

Jason Liu

jasonxliu05@gmail.com · jasonxliu.com

Education

Rutgers University, New Brunswick

September 2023 – Present

B.S. in Computer Science and Mathematics

GPA: 3.964

CS Coursework: Data Structures, Algorithms, Complexity Theory, Discrete Structures

Math Coursework: Real Analysis, Linear Algebra, Graph Theory, Theory of Probability/Statistics

Experience

Research Assistant

June 2025 – Present

Supervisor: Dr. Min Xu

Rutgers University

Research Assistant

June 2022 – Present

Supervisor: Dr. Jinchuan Xing

Rutgers University

- Develop novel genome analysis pipelines for processing and interpreting biological data
- Visualize and summarize research results through clear technical writing and presentations
- Develop and maintain laboratory websites ([Xing Lab](#) and [TIC Genetics Study](#))

Research Assistant

September 2024 – May 2025

Supervisor: Dr. He Zhu

Rutgers University

- Implemented reinforcement learning approaches for automated theorem proving using PyTorch
 - Trained and optimized machine learning models to improve mathematical reasoning capabilities
 - Presented research findings at the 21st Aresty Undergraduate Research Symposium
-

Journal Publication

1. [Liu, J.](#), Xu, M., Xing, J. (2025 July) Evaluation and Aggregation of Active Module Identification Algorithms, *Genome Biology*. (Under review)
 2. Biswas, L., Tyc, K., Aboelenain, M., Sun, S., Dundović, I., Vukušić, K., [Liu, J.](#), Guo, V., Xu, M., Scott, R., Tao, X., Tolić, I., Xing, J., Schindler, K. (2024 July) Maternal genetic variants in kinesin motor domains prematurely increase egg aneuploidy, *Proceedings of the National Academy of Sciences*. [[Featured in Rutgers Today](#)]
-

Conference Publication

1. [Liu, J.](#), Mao, W., Zhu, H. (2025 April) LLM World Models for Efficient Exploration in Automated Theorem Proving. 21st Aresty Undergraduate Research Symposium, Piscataway, NJ.
 2. Zeng, W., Xu, J., [Liu, J.](#), Marin, D., Treff, N., Xing, J. (2024 October) Identification and prioritization of candidate genes associated with aneuploidy using PGT-A data. MABC 2024, Philadelphia, PA.
 3. [Liu, J.](#), Xu, M., Xing, J. (2024 October) Systematic assessment of active module identification algorithms. MABC 2024, Philadelphia, PA.
 4. [Liu, J.](#), Xu, M., Schindler, K., Xing, J. (2023 October) Using PAPER to identify active modules in an aneuploidy dataset. MABC 2023, Philadelphia, PA.
 5. [Liu, J.](#), Sun, S., Xing, J. (2022 October) Predicting embryonic aneuploidy rate and identifying candidate genes in IVF patients using synonymous variants. MABC 2022, Philadelphia, PA.
-

Talks

1. **Conformal mappings and the Riemann mapping theorem.** *Directed Reading Program*, Department of Mathematics, Rutgers University (May 2025).
2. **Extracting biological insights from gene networks.** *Joint epigenetics group meeting*, Department of Genetics, Rutgers University (April 2025).

3. **Systematic assessment of active module identification algorithms.** *Research in Progress Seminar*, Department of Genetics, Rutgers University (January 2025).
 4. **The Weierstrass factorization theorem.** *Directed Reading Program*, Department of Mathematics, Rutgers University (December 2024).
 5. **Predicting embryonic aneuploidy rate and identifying candidate genes in IVF patients using synonymous variants.** *Lightning Talk*, MABC 2022 (October 2022).
-

Awards and Honors

- **The Paul Robeson Centennial Scholar Award**, Rutgers University (2025)
 - **The Rutgers College Scholarship**, Rutgers University (2025)
 - **The David and Dorothy Bernstein Endowed Scholarship**, Rutgers University (2024)
 - **Trainee Award**, MidAtlantic Bioinformatics Conference (2022)
-

Service

- **Mentorship:** Jakub Minkiewicz, Ellie Lu
 - **Data analysis:** Barr lab ([see Wang et al. 2024](#))
 - **Grading:** Math 291 *Honors Calculus III* (Rutgers University, Fall 2024)
 - **Tutoring:** PALS Learning Center (August 2023 – July 2024)
-

Technical Skills

- **Programming Languages:** Python, UNIX Shell, R, Java, C++
- **Libraries & Frameworks:** PyTorch, Pandas, Data visualization tools
- **Other Technical Skills:** Statistical analysis, Machine learning, Web development
- **Languages:** English (Native), Mandarin (Fluent)