

BAITIAN LI

bl3052@columbia.edu

I am Baitian Li, a first-year graduate student at Columbia University studying theoretical computer science (TCS). I completed my Bachelor's degree in Yao Class, Tsinghua University.

My primary interests lie in the study of algebraic algorithms (upper bounds) and algebraic complexity theory (lower bounds) for algebraic computational problems, and in understanding how these techniques can solve problems across different areas.

EDUCATION

Columbia University

Ph.D. student in Computer Science

Sept 2025–

Tsinghua University

B.E. in Computer Science (Yao Class), Institute for Interdisciplinary Information Sciences (IIIS)

2021–June 2025

PUBLICATION

- **Faster Convolutions: Yates and Strassen Revisited**, with Cornelius Brand, Radu Curticapean and Kevin Pratt, to appear in **SOSA 2026**.
- **Scalable Multi-Server Private Information Retrieval**, with Ashrujit Ghoshal, Yaohua Ma, Chenxin Dai and Elaine Shi, to appear in **TCC 2025**.
- **Kronecker Powers, Orthogonal Vectors, and the Asymptotic Spectrum**, with Josh Alman, to appear in **FOCS 2025**.
- **Power Series Composition in Near-Linear Time**, with Yasunori Kinoshita, in **FOCS 2024**.
- **Computing Permanents and Counting Hamiltonian Cycles Faster**, preprint: [arXiv:2309.15422](https://arxiv.org/abs/2309.15422).

RESEARCH VISITS AND INTERNSHIPS

Columbia University, Visiting student advised by Josh Alman

Feb–July 2024

SELECTED AWARDS

- Columbia SEAS Presidential Fellowship (2025).
- Yao Award (2024).

Competitive programming.

- ICPC Asia Hefei Regional Contest, 1st place (2022).
- CCPC Final Contest, 2nd place (2021).
- Chinese National Olympiad in Informatics (NOI): Gold medal (2019, 2020), Silver medal (2018).

SERVICE

- Journal reviewing: AAECC.
- Conference reviewing: ITCS (2026), SODA (2026).
- Co-organizing Yao Class Research Seminar (2024–2025).
- **Social Service.**
- Problems for Olympiad in Informatics (OI) in China: Provincial Selection Contest of Anhui (2022) and Shandong (2022), China Team Training (2022), China Team Selection (2023).
- Theory and Algorithms for Recurrent Sequences in Enumerative Combinatorics (in Chinese). In tutorial session of NOI Winter Camp 2024.

LANGUAGE

- English (Fluent)
- Chinese (Native)