ANDREW Y. KANG

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INTEREST

I am interested in exploring problems in programming languages, in data systems, and in their intersections.

EDUCATION

- **Cornell University** *August 2023 - May 2026*
  Bachelor of Arts | Double Major in Mathematics and Computer Science Ithaca, NY
  ◦ **GPA:** 4.13/4.00
  ◦ **Relevant Coursework:**
    → Adv. Linear Algebra (Honors) → Category Theory (Grad.) → Computer Organization
    → Abstract Algebra (Honors) → Kleene Algebra (Grad.) → Systems Programming
    → Real Analysis (Honors) → Discrete Mathematics → Functional Programming
    → Numerical Analysis → Analysis of Algorithms → Data Structures & OOP
    → Probability Theory → Machine Learning → PL & Compilers (Seminar)
    → Data Systems (Seminar)

PUBLICATIONS

[1]   **Andrew Y. Kang**, Yashnil Saha, and Sainyam Galhotra. (2026). Towards General-Purpose Data Discovery: A Programming Languages Approach. *2026 Conference on Innovative Data Systems Research* (CIDR). [under review]

[2]   **Andrew Y. Kang**, and Sainyam Galhotra. (2024). TQL: Towards Type-Driven Data Discovery. *2024 IEEE International Conference on Big Data* (BigData), pp. 7338-7343. IEEE. December 15-18, Washington DC, USA.

PRESENTATIONS

- **Cornell Entrepreneur of the Year: Undergraduate Research Talk** *April 2025*
  ◦ Represented undergraduate REU research for the college of computing and information science.
  ◦ Orally presented research findings to alumni 'Entrepreneur of the Year' award recipient, John Bicket '02.

- **2024 IEEE International Conference on Big Data: Conference Paper Presentation (Oral)** *December 2024*
  ◦ Orally presented the paper, *TQL: Towards General-Purpose Data Discovery*.

- **Cornell CIS REU: BURE Symposium (Poster)** *August 2024*
  ◦ Presented poster summarizing results of summer REU research.

EXPERIENCE

- **Project Lead & Undergraduate Researcher | Advisor: Prof. Sainyam Galhotra** *February 2024 - present*
  Prism Lab | Cornell University Ithaca, NY
  ◦ Studied existing literature in programming languages theory and data systems design.
  ◦ Designed formal syntax and semantics for **TQL**, a novel domain-specific language for data discovery, by leveraging techniques from programming languages and data systems research.
  ◦ Synthesized **ImpRAT**, a foundational algebraic model for data discovery in TQL.
  ◦ Led the architecture implementation by building a prototype system in Python.
  ◦ Exploring and developing potential efficient algorithms for tractable data discovery.

- **Head Teaching Assistant** *August 2024 - present*
  Courses: Functional Programming, Machine Learning | Cornell University Ithaca, NY
  ◦ Nominated by faculty for CIS Course Staff Award in recognition of excellence in teaching.
  ◦ Led recitation sessions of 30+ students, hosted office hours, and graded assignments/projects/exams.

- **Student Club Founder & President** *October 2023 - present*
  Computational & Quantitative Social Science at Cornell | Cornell University Ithaca, NY
  ◦ Founded and led a student organization interested in building data science and data engineering tools for research in the social sciences.

SKILLS

Formal Languages: Python, Java, C, C++, Rust, OCaml, Assembly, SQL, LaTeX
Natural Languages: English (native), French (proficient), Mandarin (proficient)
Other Interests: Analytic Philosophy, European History, Soccer Refereeing