

ANDREW Y. KANG

<https://andrew-kang.github.io>

aykang@umich.edu

RESEARCH Formal methods, cyber-physical systems, control theory, category theory

EDUCATION **University of Michigan**

Ph.D., Electrical and Computer Engineering, 2026 – 2031. (expected)

- Advisor: Prof. Inigo Incer

M.S., Electrical and Computer Engineering, 2026 – 2028. (expected)

Cornell University

B.A., Mathematics and Computer Science, 2023 – 2026. (graduated 1-year early)

- GPA: 4.0/4.0 (4.13/4.3 on Cornell scale)
- Magna Cum Laude in Mathematics with Distinction in all Subjects
- Phi Beta Kappa (Φ BK), Phi Kappa Phi (Φ K Φ)

EXPERIENCE **University of Michigan** Ann Arbor, MI
Graduate Student August 2026 – present

- Completed coursework and conducted research projects.

Cornell University Ithaca, NY
Project Lead & Undergraduate Researcher February 2024 – May 2026

Advisor: Prof. Sainyam Galhotra

- Studied existing literature in programming languages and databases.
- Designed syntax and semantics for TQL, a novel domain-specific language for data discovery, leveraging techniques from programming languages and databases research.
- Implemented a proof-of-concept system for language-driven data discovery in Python.
- Drafted two manuscripts compiling research results.

Head Teaching Assistant August 2024 – May 2026
Courses: Functional Programming, Formal Verification, Machine Learning

- Supervised office hour assignments of 45+ TAs.
- Oversaw grading sessions for assignments & exams.
- Led proctoring team for course exams.
- Led recitation sessions of 40+ students.

Computational & Quantitative Social Science at Cornell Ithaca, NY
Student Club Founder & President October 2023 – December 2025

- Founded and led a student organization interested in building data science and data engineering tools for research in the social sciences.

AWARDS & PRESS **Featured Graduate for Cornell CIS Class of 2026**
Cornell Bowers College of Computing and Information Science (CIS) May 2026

- Selected by Cornell CIS to be the sole representative for the CS graduates of the Class of 2026.
- Interviewed and featured across official university websites and social media channels (Linkedin, Instagram, X and Facebook). [Andrew Kang '26: Making the most of undergraduate research opportunities.](#)

2025-2026 CRA Outstanding Undergraduate Researcher Award (Honorable Mention)
Computing Research Association (CRA) December 2025

- Nominated by Cornell Math Department; received honorable mention from Computing Research Association (CRA) amongst undergraduates across North America in recognition of outstanding potential in computing research.

Cornell CS Department Course Staff Award (Nominee)
Cornell Bowers College of Computing and Information Science (CIS) December 2024

- Nominated by faculty for course staff award in recognition of excellence in teaching.

Summer Research Experience for Undergraduates (Grant)
Cornell Bowers College of Computing and Information Science (CIS) June 2024

- Selected and received \$7000 grant to participate in Cornell's BURE summer REU.
- Selected and received additional \$1000+ travel grant for conference presentation through Cornell's BURE extension.

PUBLICATIONS **Andrew Y. Kang**, Yashnil Saha, and Sainyam Galhotra. **Towards General-Purpose Data Discovery: A Programming Languages Approach**. arXiv Preprint, 2025.

Andrew Y. Kang, and Sainyam Galhotra. **TQL: Towards Type-Driven Data Discovery**. IEEE International Conference on Big Data (**BigData**), 2024.

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 findings to alumni 'Entrepreneur of the Year' award recipient, John Bicket '02.

IEEE BigData 2024: Conference Paper Presentation (Oral) December 2024

- Orally presented the paper, *TQL: Towards Type-Driven Data Discovery*.

Cornell CIS REU: BURE Symposium (Poster) August 2024

- Presented poster summarizing results of summer REU research.

PROJECTS **Eta Compiler (Cornell CS 4120/4121 - Compilers)** January 2026 - May 2026

- Built a complete optimizing compiler targeting x86-64 for Eta, a C-like programming language.
- Implemented lexer, parser, typechecker and intermediate and assembly code generation.
- Implemented dataflow analysis and optimization passes (including constant folding, copy propagation, dead-code elimination, and local-value numbering).

COURSEWORK	• Advanced Linear Algebra [†]	• Real Analysis I & II [†]	• Compilers (incl. Practicum)
	• Abstract Algebra [†]	• Numerical Analysis	• Systems Programming
	• Kleene Algebra*	• Probability Theory	• Functional Programming
	• Category Theory*	• Analysis of Algorithms	• Data Structures & OOP
	• Applied Logic	• Machine Learning	• Computer Organization

[†]Indicates honors-level coursework

*Indicates graduate-level coursework

RELEVANT SKILLS Formal Languages: C/C++, Python, Java, Assembly, Rust, OCaml, Rocq, Lean, SQL, $\text{\LaTeX}$
Natural Languages: English (native); French, Mandarin (proficient); Latin (intermediate)