Yuqi (Stephanie) Ma

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EDUCATION

Cornell University B.S. GPA: 4.14/4.00 Cumulative: 4.08/4.00
Master of Science (M.S.) in Computer Science *Aug 2024 - May 2026*
Bachelor of Science (B.S.) in Computer Science (Honors) *Aug 2021 - May 2024*
M.S. Advisors: Andrew Myers, Dexter Kozen B.S. Advisor: Alexandra Silva
Cumulative GPA: 4.08/4.00 B.S. GPA: 4.14/4.00
funded teaching assistantship with thesis, minor in mathematics (M.S. and B.S.), summa cum laude

PUBLICATIONS

[1] Shawn Ong, **Stephanie Ma**, Dexter Kozen. Probabilistic Kleene Algebra with Angelic Nondeterminism. *In Proceedings of the ACM on Programming Languages, Volume 9, Issue PLDI, June 2025*. https://doi.org/10.1145/3729286

[2] Shawn Ong, **Stephanie Ma**, Dexter Kozen. Probability and Angelic Nondeterminism with Multiset Semantics. *Technical Report*. https://arxiv.org/abs/2412.06754

[3] Siqiu Yao, Haobin Ni, **Stephanie Ma**, Noah Schiff, Andrew C. Myers, Ethan Cecchetti. A Language for Smart Contracts with Secure Control Flow. *Technical Report*. https://arxiv.org/abs/2407.01204

[4] Mariarosaria Barbaraci, **Stephanie Ma**, Harjasleen Malvai, Marwa Mouallem, Silei Ren, Yoshi Sato, Sen Yang, Fan Zhang. DeadDrop: Responsible Disclosure of Smart Contract Bugs. *In Submission*.

RESEARCH EXPERIENCE

SCIF: Smart Contract Information Flow [3], Cornell *Sep 2024 - Present*
Advisor: Andrew C. Myers, Ethan Cecchetti

- Lead contributor to language design and compiler implementation for IFC-based smart contract security.
- Design first-class closure typing and semantics; led vulnerability evaluation on real Solidity benchmarks and implemented sound compiler optimizations.

DeadDrop: Responsible Disclosure of Smart Contract Bugs [4], IC3, Yale *Jun - Dec 2025*
Collaborators: Fan Zhang et al.

- Designed the proof/specification language and verification pipeline for TEE-based private bug disclosure.

Probabilistic Kleene Algebra [1, 2], Cornell *May 2022 - May 2024*
Advisors: Dexter Kozen, Shawn Ong

- Developed core semantics, automata constructions, and proof lemmas for combining probability with angelic nondeterminism.

Skip-free Guarded Kleene Algebra, Cornell *Mar 2024 - May 2024*
Advisors: Alexandra Silva, Todd Schmid

- Derived semantic extraction rules connecting LLEE automata to algebraic completeness proofs.

TALKS AND PRESENTATIONS

DeadDrop: Responsible Disclosure of Smart Contract Bugs, IC3 Summer Camp *Jun 2025*
SCIF w/ Closure: A Smart Contract Information Flow Language, Cornell PL Retreat *May 2025*
Types, Abstraction, and Parametric Polymorphism, Great Works in PL Seminar *Mar 2024*
Probability x Nondeterminism, Cornell BURE/CSURP *Aug 2023*

AWARDS AND HONORS

3rd Place Team, IC3 Summer Camp ($700) *Jun 2025*
Teaching Assistant Recognition Nominee *May 2025*
Cornell CIS Dream Grant ($1,000) *Sep 2024*
Course Staff Exceptional Service Award *May 2024*
Cornell Grace Hopper Celebration Award ($1,400) *Apr 2023*
Clare Boothe Luce Research Scholar ($10,000) *Jun 2022*
Tau Beta Pi Engineering Honor Society *Mar 2023*
Dean's List *2021 - 2024*

TEACHING

Head Teaching Assistant, Cornell CS *Jan 2022 - Present*
CS 4820: Introduction to Analysis of Algorithms *Fall 2022, Fall 2023, Fall 2024, Spring 2025*
Supervised by Anke van Zuylen, Michael Kim
CS 4110: Programming Languages and Logics *Spring 2024, Fall 2025*
Supervised by Adrian Sampson, Nate Foster
CS 2800: Discrete Structures *Spring 2022, Spring 2023, Fall 2023, Spring 2026*
Supervised by Anke van Zuylen

SERVICE

Student Volunteer, POPL 2026 *Jan 2026*
Student Volunteer, SPLASH 2025 *Oct 2025*
Co-president, Cornell ICPC Team *May 2024 - Present*
Vice-president, Cornell ICPC Team *Mar 2022 - May 2024*

WORK EXPERIENCE

Software Engineer Intern, Adobe Acrobat Mobile AI/ML *May - Aug 2025*
Developed on-device AI Writing Tools for iOS/iPadOS (C++, Objective-C++, Swift), designed cross-surface invocation and activation logic, improved multi-entry UX reliability through invariants.

Software Engineer Intern, Adobe Acrobat Mobile PLG *May - Aug 2024*
Implemented end-to-end note-taking and "Edit as PDF" features on iOS/iPadOS (C++, Objective-C++, Swift) spanning document acquisition, annotation workflows, filtering, and export pipelines.

RELEVANT COURSEWORK

PL (Graduate) Programming Languages (CS 6110), Advanced Compiler (CS 6120), Program Synthesis (CS 6172), Category Theory (CS 6117), Theory of Computation (CS 6810), Great Works in PL (CS 7194)

PL (Undergraduate) Functional Programming (CS 3100), Compiler (CS 4120), Theory of Computation (CS 4810), Proof Theory (MATH 4820), Deductive Logic (MATH 3810)

Theory and others (Grdauate) Mathematical Logic (MATH 6810), Recursion Theory (MATH 6840), Probabilistic Proofs (CS 6814), Advanced Algorithm (CS 6820), Large Language Models (CS 6784), Information Networks (CS 6850)