

GINA YUAN

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🐙 github.com/ygina

EDUCATION

Stanford University

Ph.D. in Computer Science, *Sep. 2019 – Jun. 2025 (expected)*

📍 Stanford, CA

- **Co-Advisors:** Keith Winstein, David Mazières, and Matei Zaharia
- **Research topics:** I am interested in building systems and designing algorithms for high-performance networks. My current research involves designing Internet middleboxes that can provide performance enhancements even when protocols are fully encrypted, as well as algorithms for path-aware congestion control or fast hash table lookups in the dataplane.

Massachusetts Institute of Technology

M.Eng. in Computer Science and Engineering, *Jan. 2019 – Sep. 2019*

📍 Cambridge, MA

- GPA: 5.0/5.0
- **Advisor:** Robert Morris
- **Thesis Title:** Scalable Fault Tolerance for High-Performance Streaming Dataflow

Massachusetts Institute of Technology

B.S. in Computer Science and Engineering, *Sep. 2015 – May 2019*

📍 Cambridge, MA

- GPA: Technical 5.0/5.0, Cumulative 4.9/5.0
- **Systems Coursework:** distributed systems, operating systems, database systems, computer systems security, performance engineering, compilers, decentralized applications, multicore programming
- **Theory Coursework:** applied cryptography, algorithms II, theory of computation, abstract algebra

PUBLICATIONS

Conference Papers (Peer-Reviewed)

- 🌟 **Sidecar: In-Network Assistance for Secure End-to-End Transport Protocols**
Gina Yuan, Matthew Sotoudeh, David K. Zhang, Michael Welzl, David Mazières, Keith Winstein. NSDI 2024.
- 🌟 **Cornflakes: Zero-Copy Serialization for Microsecond-Scale Networking**
Deepti Raghavan, Shreya Ravi, **Gina Yuan**, Pratiksha Thaker, Sanjari Srivastava, Micah Murray, Pedro Henrique Penna, Amy Ousterhout, Philip Levis, Matei Zaharia, Irene Zhang. SOSP 2023.
- 🌟 **Offload Annotations: Bringing Heterogeneous Computing to Existing Libraries and Workloads**
Gina Yuan, Shoumik Palkar, Deepak Narayanan, Matei Zaharia. USENIX ATC 2020.
- 🌟 **Aurum: A Data Discovery System**
Raul Castro Fernandez, Ziawach Abedjan, Famien Koko, **Gina Yuan**, Samuel Madden, Michael Stonebraker. ICDE 2018.

Workshop Papers (Peer-Reviewed)

- 🌟 **Sidecar: In-Network Performance Enhancements in the Age of Paranoid Transport Protocols**
Gina Yuan, David K. Zhang, Matthew Sotoudeh, Michael Welzl, Keith Winstein. HotNets 2020.
- 🌟 **Scalable Fault Tolerance for High-Performance Streaming Dataflow**
Gina Yuan. Poster and abstract at ACM Student Research Competition at SOSP SRC 2019.

EXPERIENCE

University of California, San Diego

Visiting Graduate Student, *Jun. 2022 – Sep. 2022*

📍 La Jolla, CA

- Investigated static and dynamic analysis techniques for safe foreign function interfaces (FFI) in Rust with Prof. Deian Stefan. Performed a measurement study of bugs in Rust FFI crates that are intended to be called by other languages.

Facebook, Inc.

Software Engineering Intern, Jun. 2018 – Aug. 2018

📍 Menlo Park, CA

- Created an automated, distributed platform for continuously fuzzing libFuzzer test harnesses in C++. In the matter of a day, re-discovered all the security vulnerabilities that had been found through manual fuzzing over several months and more.

Battlecode AI Programming Competition

President, Apr. 2016 – Feb. 2018

📍 Cambridge, MA

- Directed competition with 1000+ worldwide competitors, \$100,000+ in revenue from corporate sponsors, and notable alumni like the founders of Dropbox, Amplitude, ZenSourcer, Benchling.
- Featured in Hacker News, Vice Motherboard, The Tech, and an IAmA on the front page of Reddit.
- Expanded Battlecode in the first year players could write robots in any programming language (previously only Java).
- Founded Battlehack, a 24-hour condensed version of Battlecode.
- Technical contributions: Rust game engine with time-constrained computation, TypeScript visualization tool with FlatBuffer protocol, Django website with Angular.js frontend, and a scrimmage server using Docker containers hosted on AWS.







MongoDB Inc.

Software Engineering Intern, May 2017 – Aug. 2017


📍 New York, NY

- Extended MongoDB's in-house continuous integration system in Go to build on modern cloud providers such as Google Compute, OpenStack, and VMware vSphere, increasing the availability of uncommon platforms like Arch Linux on ARM.
- Applied automation tools like Chef and Packer to build and provision machine images.

TEACHING

-  **CS144 Introduction to Computer Networking, Spring 2023** 📍 Stanford, CA
Graduate teaching assistant.
-  **CS245 Principles of Data-Intensive Systems, Winter 2021** 📍 Stanford, CA
Graduate teaching assistant.
-  **Battlecode Splash Class, Spring 2018** 📍 Cambridge, MA
Six-week class teaching middle and high school students how to code through Battlecode. Built an in-house web IDE sandbox for pedagogical purposes.
-  **6.147 Battlecode AI Programming Competition, IAP 2017, IAP 2018** 📍 Cambridge, MA
Four-week class teaching MIT students how to build a basic Battlecode program in Java. Streamed lectures on Twitch ( mitbattlecode), which were so popular that Battlecode became an official Twitch game category.
-  **6.046 Design and Analysis of Algorithms, Spring 2017, Fall 2017** 📍 Cambridge, MA
Graded for two semesters and tutored for one semester through MIT Eta Kappa Nu, the national honor society for EECS.

HONORS

-  **Cambridge2Cambridge Cybersecurity Challenge Top 5 Individual Qualifier, July 2018**
Capture The Flag (CTF) competition. Qualified for a free trip to the University of Cambridge.
-  **Battlecode Finalist, January 2016**
International AI programming competition. Top 8 out of 100 teams.
-  **\$4,000 Mu Alpha Theta Scholarship, June 2015**
National math honor society.
-  **U.S.A. Mathematical Olympiad Qualifier, May 2013, May 2015**
Prestigious high school mathematics competition. Top 0.5% of 100,000.

SERVICE

- SIGCOMM 2023 Artifact Evaluation Committee
- OSDI 2020 Artifact Evaluation Committee
- Stanford CS Grad Women's Lunch Organizer (2023)
- Stanford CS PhD Student Social Chair (2020-2022)