Gerry Wan

gerryw@stanford.edu
571-295-1051
https://thegwan.github.io/

Education

Stanford University
Ph.D. in Computer Science, Expected June 2024

- Advised by Prof. Zakir Durumeric
- Thesis topic: *Practical Systems for High-Speed Network Traffic Analysis*

Princeton University
B.S.E. in Electrical Engineering, Certificate in Applications of Computing, June 2019

- Graduated *summa cum laude*
- Senior thesis: *Guard Placement Attacks on Path Selection Algorithms for Tor* (recipient of the Calvin Dodd MacCracken Senior Thesis Award), advised by Prof. Prateek Mittal

Thomas Jefferson High School for Science and Technology
Advanced Studies Diploma, June 2015

Research Interests

I am interested in developing tools and infrastructure for modern networks. I build systems to understand network traffic, collect large-scale data, and use the resulting perspective to evaluate and improve real-world networks. My research has informed the design of systems for high-speed packet processing on both commodity hardware and programmable SmartNICs. More recently, I have been working on solving problems related to the design of network infrastructure for large-scale machine learning (ML) workloads and next generation telecommunications, as well as techniques for optimizing ML model serving efficiency.

Publications

[1] **CATO: End-to-end Optimization of ML Traffic Analysis Pipelines**
Gerry Wan, Shinan Liu, Francesco Bronzino, Nick Feamster, and Zakir Durumeric
In submission

[2] **Efficient Multi-WAN Transport for 5G with OTTER**
Mary Hogan*, Gerry Wan*, Yiming Qiu, Sharad Agarwal, Ryan Beckett, Rachee Singh, and Paramvir Bahl
In submission

[3] **Retina: Analyzing 100 GbE Traffic on Commodity Hardware**
Gerry Wan, Fengchen Gong, Tom Barbette, and Zakir Durumeric
ACM Special Interest Group on Data Communication (SIGCOMM), August 2022

[4] **On the Origin of Scanning: The Impact of Location on Internet-Wide Scans**
Gerry Wan, Liz Izhikevich, David Adrian, Katsunari Yoshioka, Ralph Holz, Christian Rossow, and Zakir Durumeric
ACM Internet Measurement Conference (IMC), October 2020

[5] **Guard Placement Attacks on Path Selection Algorithms for Tor**
Gerry Wan, Aaron Johnson, Ryan Wails, Sameer Wagh, and Prateek Mittal
Privacy Enhancing Technologies Symposium (PETS), July 2019

Experience

Student Researcher, Google
Network Infrastructure; Machine Learning, Systems, and Cloud AI; July 2023-Present
Advised by Prof. Eric Rozner, Dr. Rui Wang, and Dr. Joel Armstrong
- Research on machine learning for datacenter network traffic engineering.

Research Contractor, Microsoft
Office of the CTO; Azure for Operators; August 2022-June 2023
- Continuing work performed as Research Intern.

Research Intern, Microsoft
Office of the CTO; Azure for Operators; May-August 2022
Advised by Dr. Sharad Agarwal, Dr. Rachee Singh, Dr. Ryan Beckett, Dr. Abhishek Udupa, and Dr. Victor Bahl
- Research on multi-WAN routing performance and optimization.

Software Engineer Intern (PhD), Microsoft
Azure PhyNet; Azure Networking Group; June-August 2019
Advised by Dr. Andrew Putnam
- Built performance testing software framework for Azure Accelerated Networking FPGA SmartNICs, achieving 100Gbps testing throughput.

Software Engineer Intern, Microsoft
Data Engine; Business Applications Group; June-August 2018
- Reduced response times for Dynamics365 offline database synchronization by 75% while doubling the maximum number of concurrent users.

Speaking

October 2022	Retina: Analyzing 100 GbE Traffic on Commodity Hardware **Arista Networks, Remote**
September 2022	Retina: Analyzing 100 GbE Traffic on Commodity Hardware **Pigasus Developers Meeting, Remote**
August 2022	Retina: Analyzing 100 GbE Traffic on Commodity Hardware **SIGCOMM 2022, Amsterdam, Remote**
July 2022	Retina: Analyzing 100 GbE Traffic on Commodity Hardware **University of Chicago, Remote**
July 2022	Retina: Analyzing 100 GbE Traffic on Commodity Hardware **Microsoft AFO, Remote**
December 2020	Passive Analysis for Large-Scale Internet Security Research **Stanford Systems Seminar, Remote**
October 2020	Passive Analysis for Large-Scale Internet Security Research **IMC 2020, Remote**

October 2020	On the Origin of Scanning: The Impact of Location on Internet-Wide Scans **Stanford Security Lunch Stanford, CA**
November 2019	Guard Placement Attacks on Path Selection Algorithms for Tor **Stanford Security Lunch Stanford, CA**
July 2019	Guard Placement Attacks on Path Selection Algorithms for Tor **PETS 2019, Stockholm**

Teaching

Winter 2023	**Lecturer/Head Course Assistant, The Modern Internet** CS 249i, Stanford University, Instructor: Prof. Zakir Durumeric
Fall 2022	**Lecturer/Head Course Assistant, Topics in Computer and Network Security** CS 356, Stanford University, Instructor: Prof. Zakir Durumeric
Spring 2019	**Teaching Assistant, Building Real Systems (Car Lab)** ELE 302, Princeton University, Instructor: Prof. Jeff Thompson
Fall 2018	**Teaching Assistant, Operating Systems** COS 318, Princeton University, Instructor: Prof. Jaswinder Singh
Fall 2017	**Teaching Assistant, Contemporary Logic Design** ELE 206/COS 306, Princeton University, Instructor: Prof. Sharad Malik
Spring 2017-18	**Lab Assistant, Introductory Computer Science Sequence** COS 126, 226, 217, Princeton University

Advising and Mentoring

Stanford undergraduate and master's students

2023	Thea Rossman, Ihyun Nam, Anna Ascheman, Michelina Hanlon
2022	Jerry Chen, Laura Bauman, George Hosono, Daniel Rebelsky
2021	Fengchen (Maggie) Gong (→ Princeton Ph.D.), Gordon Martinez-Piedra

Service

Subreviewer

- USENIX Symposium on Networked Systems Design and Implementation (NSDI), 2021
- CCS Workshop on Privacy Preserving Machine Learning in Practice (PPMLP), 2020
- ACM Internet Measurement Conference (IMC), 2020, 2021
- USENIX Security Symposium (SEC), 2020

Volunteering

- Stanford Computer Science Student Applicant Support Program, 2020, 2021
- Princeton Electrical Engineering Website Design Committee (`ece.princeton.edu`), 2019

Honors and Awards

Calvin Dodd MacCracken Senior Thesis Award
Princeton University School of Engineering and Applied Science, 2019
For the senior thesis that is most distinctive for its inventiveness and technical accomplishment.

Hisashi Kobayashi Prize
Princeton University Department of Electrical Engineering, 2019
For an outstanding record in the broad field of computing