

YIFEI SUN

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RESEARCH INTEREST

- Distributed systems related formal verifications and program analysis
- High-performance managed runtime systems
- Type theory and type based program analysis for modern programming languages

EDUCATION

Northeastern University

2023/09 - 2025/04

M.Sc. in Computer Science

Boston, MA, USA

Google CSRMP Fellow, 2023b

Member of the [Systems Research Group](#), Advisor: [Ji-Yong Shin](#)

University of Tokyo

2024/05 - 2024/09

Visiting Research Student

Tokyo, Japan

NixOS Foundation Summer of Nix NGIpkgs Working Group, 2024

Member of the [Computing Software Group](#), Advisor: [Tomoharu Ugawa](#)

University of Utah

2019/08 - 2023/05

B.Sc. in Computer Science

Salt Lake City, UT, USA

Academic Excellence Scholarship, 2019-2023

Thesis: [System and Methods to Determine ME/CFS & Long COVID Disease Severity Using Wearable Sensor & Survey Data](#)

Member of the [Integrated Self-Powered Sensing Lab](#), Advisor: [Shad Roundy](#), Co-advisor: [Tucker Hermans](#)

EMPLOYMENT

Teaching Assistant, Northeastern University

2024/01 - 2024/05

- Graduate TA for [CS 3700: Networks and Distributed Systems](#), responsible for office hours, grading (autograder setup and debugging), and lab assignments
- Topics including routing, congestion control, network security, and distributed protocols like NTP and Raft, and general network programming with Python, Haskell, and Go

Research Assistant, University of Utah

2021/08 - 2023/05

- Joint research project in collaboration with the Bateman Horne Center's clinical research team, developed and managed a new data collection infrastructure
- The infrastructure aggregates 100+ IMUs, multiple single-board computers and high-performance servers, collected terabyte-level motion data, then applied sensor fusion, motion analysis, and machine learning techniques on collected time-series and survey data

System Administrator, University of Utah

2019/12 - 2020/09

- Enterprise system administration, managed 1000+ university-owned iOS/iPadOS/macOS/tvOS, Windows, and Linux systems
- Created multiple automation tools to perform multi-platform unattended on-boarding, off-boarding, package licensing, updates, and distributions

Intern, DJI

2018/07 - 2018/08

- Champion of the 2018 DJI RoboMaster Summer Camp Competition
- Competitive robotic system design/modeling, embedded system programming, control system programming, and computer vision, led two teams of 5 to design and build a STM32F4 based robotic system to perform predefined tasks

PROJECT

AS10779ysun.co/10779

- Operator of AS10779, `23.161.104.0/24` and `2620:BE:A000::/48` (under ARIN)
- Experimental research network, tunneled peering with WireGuard served with NixOS

Consistencygithub.com/stepbrobd/consistency

- A verification tool for testing the compositional consistency guarantees of distributed systems
- Z3 based verification tool to axiomatically check the compositions of multiple weak consistency semantics and the final semantics' theoretical consistency guarantees and safety properties

Finchgithub.com/stepbrobd/finch

- A genetic algorithm framework and visualizer written in Go
- User-definable genetic algorithm configurations, including population size, layer size (input, hidden, output), mutation rate, and training/testing data

SRDgithub.com/stepbrobd/srd

- Proof of concept Go static race checker based on extracting structural operational semantics rules and applying the rule sets to perform static race detection.
- As a static race checker, false positives/negatives are expected. The detection is done by a stateful traversal of provided Go source file's abstract syntax tree.

PUBLICATION

- [1] **Y. Sun**, "System and Methods to Determine ME/CFS & Long COVID Disease Severity Using Wearable Sensor & Survey Data," 2023.
- [2] **Y. Sun**, S. D. Vernon, and S. Roundy, "System and Method to Determine ME/CFS and Long COVID Disease Severity Using a Wearable Sensor." Apr. 2024.