# Shuai (Wayne) Wang

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## EDUCATION

**Middlebury College** Middlebury, Vermont

*Candidate for B.A. with a **Major in Computer Science** and a **Minor in Political Science*** Sep. 2018 - Feb. 2023

**Cumulative GPA:** 3.89 / 4.0 | **Major GPA:** 3.95

**Relevant Courses**: Operating Systems, Systems Programming, Compiler Design, Computer Architecture, Software Development, Systems Security, Data Structures, Artificial Intelligence, Data Science, Probability

## SKILLS

**Programming Languages:** Java, C/C++, JavaScript (TypeScript), Python, R, Ruby, SML, Bash

**Frameworks and Technologies:** React, Next.js, Native Android, Git, SQLite, PostgreSQL, Linux (Arch, Debian), FreeBSD

## PROFESSIONAL EXPERIENCE

**Middlebury College – Economics Department**, *Full stack Developer* Jun. 2022 – Aug. 2022

- Developed Econ Simulations, an interactive website for economics and statistics teaching, using TypeScript, React, and Next.js.
- Designed and implemented 3 new simulation modules. Rehabilitated 8 bottlenecking computations, reducing their computation time by up to 2,000% and releasing the user interface meanwhile. Refactored the website of 15+ pages to be compatible with mobile devices.
- The newly developed modules are adopted in multiple college courses in economics and statistics by professors at Middlebury College and other higher education institutions.

**Middlebury College – Computer Science Department**, *Research Assistant* Jun. 2021 – May. 2022

- Performed manual and static analysis on 1,500 lines of in-kernel protocol stack implementations for IP/TCP and USB on Linux, FreeBSD, and illumos to study the feasibility of retrofitting them with generated protocol parsers. Included manual control flow analysis. Analyzed and visualized the result.
- Publication: W. Wang and P. C. Johnson, "Research Report: On the Feasibility of Retrofitting Operating Systems with Generated Protocol Parsers," *2022 IEEE Security and Privacy Workshops (SPW)*, 2022, pp. 198-207, doi: 10.1109/SPW54247.2022.9833857.
- Presented the project at the Eighth Workshop on Language-Theoretic Security at the IEEE CS Security & Privacy Workshops in May 2022.

**Xiaomi Technology**, *Software Engineer Intern* Jun. 2020 – Aug. 2020

- Engaged in the development of Mi Browser Android application using Java. Collaborated closely with UI/UX designers and product managers in an Agile team to deliver 10+ new features on 3 monthly major updates.
- Programmed defense mechanisms against malicious Drive-By downloads and DoS attacks, protecting 20,000+ users.
- Debugged critical application issues such as ANRs, memory leaks, and concurrency issues.

## PROJECTS AND LEADERSHIP

**Leading Teaching Assistant**, *Middlebury College – Computer Science Department* Sep. 2019 – May. 2022

- Assisted professors to produce course content and develop course structure for intro level CS classes for 4 semesters.
- Held 4-hour-long weekly tutoring hours for 60+ students in Computer Architecture and Data Structures to offer help on assignments and course contents.
- Collaborated with professors and other tutors to construct a supportive and inclusive learning environment by monitoring students' learning progress.

**Full stack Developer**, *MIMDB(Middlebury IMDB)* Sep. 2021 – Jan. 2022

- Engaged in full stack development of MIMDB using React, Framer Motion, Next.js, and PostgreSQL to provide a content hosting and display platform for students and faculties at Middlebury College Film Department.
- Collaborated with team members in an Agile environment under the Scrum methodology and practiced test-driven development.