

# Wayne (Shuai) Wang

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## EDUCATION

### Middlebury College

*Candidate for Bachelor of Arts with a **Major of Computer Science** and a **Minor in Political Science***

Middlebury, Vermont, USA

Est: Feb 2023

**GPA:** 3.86 | **Major GPA:** 3.93

**Relevant Courses:** Advanced Operating Systems, Systems Programming, Computer Architecture, Programming Languages, Data Structure, Algorithms and Complexity, Artificial Intelligence, Software Development, Usable Mobile Interfaces

### Experimental High School Attached to Beijing Normal University

Beijing, China

**GPA:** 3.94

May 2018

## SKILLS

**Programming Languages:** Java, C, JavaScript, Python, Bash, Scheme

**Operating Systems:** Linux (Arch, Debian), MacOS, FreeBSD

**Frameworks and Technologies:** React, Next.js, Native Android, Git, SQLite, PostgreSQL, Spring

**Languages:** English (Fluent), Mandarin Chinese (Native)

## RESEARCH

### On the Feasibility of Retrofitting Operating Systems with Generated Protocol Parsers

Middlebury, VT

*Wayne (Shuai) Wang, Peter C. Johnson*

June 2021-Present

- Performed manual and static analysis of in-kernel protocol stacks, for IP/TCP and USB on Linux, FreeBSD, and illumos. Included manual control flow analysis. Analyzed and visualized the result, and produced research paper accepted by IEEE peer-reviewed Eighth Workshop on Language-Theoretic Security (langsec.org).

## EXPERIENCE

### Xiaomi

Beijing, China

*Android Development Engineer Internship*

Jun. 2020 - Aug. 2020

- Developed the default browser MiBrowser for Xiaomi devices using Java in Android Studio. Collaborated closely with UI/UX designers and product managers to deliver new features and bugfixes on monthly major updates. Implemented defense mechanisms against malicious Drive-By downloads and DoS attacks. Debugged critical application issues such as ANRs, memory leaks, and concurrency issues. Optimized the client's adaption of Android's multi-window and pic-in-pic mode.

### MIMDB

Middlebury, VT

*Full-stack Developer*

Sep. 2021 - Jan. 2022

- Designed and built the full-stack website MIMDB([mimdb.herokuapp.com](http://mimdb.herokuapp.com)), the Middlebury College movie database. In charge of designing and implementing RESTful APIs and database for front-end retrieval, content submission, and user authentication, using Next.js and SQLite. Implemented front-end UI with animation using React and Framer Motion. Developed application components in an Agile environment under the Scrum methodology and practiced test-driven development.

### MiddCourses2.0

Middlebury, VT

*Back-end Developer*

Feb. 2022 - Present

- Led the back-end development team to design database and API for Middlebury College's in-house course and professor review website using Next and PostgreSQL. Implemented key functionalities such as database interface and login management, and conducted database performance optimization.

### Teaching Assistant

Middlebury, VT

*Tutor*

Sep. 2019 - Present

- Tutored for Middlebury College undergraduate Computer Science courses CS201 Data Structure and CS202 Computer Architecture. Assisted professors in instructing lab sessions and held office hours for post-class tutoring sessions. Helped students with topics including Computational complexity, BST, Graphs, Heap, and Hash Tables in Data Structure, and combinational logic, digital electronics, memory structure, assembly language, and basics of C and Linux in Computer Architecture.

# 王帅

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## 教育经历

本科: Middlebury College 明德学院 (美国排名第五文理学院) · 大四在读 2018.9 ~ 2023.2

本科主修: *Computer Science* 计算机科学, 辅修: *Political Science* 政治科学 GPA: 3.86 | 专业 GPA: 3.93

相关课程: UNIX 系统编程、高级操作系统、计算机架构、编程语言、数据结构、算法和复杂性、人工智能、全栈软件开发、移动端交互界面设计及开发

高中: 北京师范大学附属实验中学 · 高中国际部 2015.9 ~ 2018.6

## 专业技能

- 计算机语言: Java、C、JavaScript、Python、Bash、Scheme - 操作系统: Linux(Arch, Debian)、MacOS、FreeBSD
- 框架和技术栈: React, Next.js, Native Android, Git, SQLite, PostgreSQL, Spring - 语言: 英语, 普通话

## 科研

### On the Feasibility of Retrofitting Operating Systems with Generated Protocol Parsers

Shuai (Wayne) Wang, Peter C. Johnson

2021.6 ~ 今

- 在研究项目中对系统内核中的协议栈代码进行静态分析。
- 对 Linux、FreeBSD、illumos 三个开源系统内核中的 IP/TCP 和 USB 两个协议栈进行了控制流分析和对比。
- 对分析结果进行了统计和可视化展示, 最终提交论文并被 IEEE S&P 研讨会下的 Language-theoretic Security 工作坊收录 ([langsec.org/spw22](http://langsec.org/spw22))。

## 经历

### 北京小米移动软件有限公司

软件工程师实习

2020.6 ~ 2022.8

- 使用 Java 和 Android Studio 参与了小米浏览器安卓客户端的迭代开发。与后端工程师紧密合作, 开发了针对恶意下载引流和其引发的 DoS 的防御功能。参与解决了关键客户端问题, 例如 ANR、内存泄漏和并发问题。为客户端进行了对于安卓分屏和画中画模式的适配。

### MIMDB

全栈工程师

2021.9 ~ 2022.1

- 设计并搭建了明德学院电影资料库网站 MIMDB([mimdb.herokuapp.com](http://mimdb.herokuapp.com))。负责设计 RESTful API 和数据库, 并用 Next.js 和 SQLite 编写了其功能, 例如内容下发、内容提交和登陆授权。用 React 和 Framer Motion 实现了前端展示和动画。在 Scrum 框架下进行敏捷开发并编写测试用例。

### MiddCourses2.0

后端工程师

2022.2 ~ 今

- MiddCourses2.0 是明德学院的课程和教授评价网站。负责数据库和 API 的后端开发, 用 Next.js 和 PostgreSQL 实现其关键功能, 包括数据库交互, 登录管理, 并进行了数据库性能优化。

### CS201 数据结构和 CS202 计算机架构

助教

2019.9 ~ 今

- 与教授共同辅导两门课程的实验课, 在课外的答疑时间中辅导学生作业。数据结构课程内容涉及计算复杂性、二叉查找树、图、堆、哈希表等; 计算机结构课程内容涉及组合逻辑、数字电路、内存结构、汇编语言以及 C 和 Linux 的基础知识。