

Garrett Gu

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EDUCATION

- 08/2018 – 12/2023 **B.S./M.S. Computer Science (Honors), B.S. Mathematics, University of Texas at Austin**
- **GPA:** 3.99, member of Turing Scholars Honors Program
 - **TA:** Computer Security, Honors OS (x2), Honors Computer Architecture
 - **Graduate coursework:** Advanced Cryptography, Cryptography, Reinforcement Learning, Advanced OS, Systems Verification, Automated Logical Reasoning, Computer Security
 - **Undergraduate coursework:** Ethical Hacking, Virtualization, Honors AI, Computer Networks, Topology, Abstract Algebra, Number Theory

PROFESSIONAL EXPERIENCE

- 05/2022 – 08/2022 **Software Engineer Intern, Plaid, Data Security**
- Automated AuthN/AuthZ certificate rotation in **AWS IAM** using a **Kubernetes** CronJob written in **Go**, allowing for a reduction in certificate validity period by **50%**
 - Using **Go**, implemented performant, secure cryptographic signing support within a centralized cryptography service, with support for **Go**, **Python**, and **Node.js** clients
 - Designed migration plan to facilitate future key rotation and revocation plans
 - Investigated communication between microservices in a **Kubernetes** cluster and proposed ideas to tighten security
- 05/2021 – 08/2021 **Security Engineer Intern, Praetorian Security**
- Proposed and prototyped **GoKart**, a new open-source **Go** static application security testing (**SAST**) tool designed for vastly reduced false-positive occurrence (**2,000+** stars on GitHub)
 - Conducted in-depth security audits and assessments on several Fortune-500 companies
- 05/2020 – 08/2020 **Software Engineer Intern, Microsoft, M365 Core Security**
- Trained an **ML recommendations system** for data-center access control with **scikit-learn**
 - Final **C#** implementation achieved **93% accuracy** benefiting **98%** of >1000 test users, saving an estimated **200 hours** of engineer time per year while improving security
- 05/2019 – 08/2019 **Software Engineer Intern, The BHW Group**
- Developed **Go/React Native** applications for medical information and school alerts

PROJECTS

- 06/2021 – present **Ghidra-Wasm, Open-Source Reverse-Engineering for WebAssembly**
- Developed a fully-featured WebAssembly plugin for **Ghidra**, a reverse-engineering framework maintained by the NSA, enabling full disassembly and decompilation for the first time
 - Collaborated with other contributors **remotely** for inclusion into Ghidra's main feature set
- 04/2019 – 06/2019 **OOPBoy, Game Boy Emulator**
- Built a state-of-the-art, fully-featured Nintendo Game Boy emulator in Java
 - Surpassed official Nintendo emulator in several CPU accuracy benchmarks

LEADERSHIP

- 12/2018 – present **UT Information and Systems Security Society, Co-President**
- Created dozens of cybersecurity challenges for events with **>100** contestants on average
 - Prepared and presented write-ups and talks over security techniques and best practices
 - Authored novel challenges for a CTF attracting **>5,000** unique competitors from **>60** countries

SKILLS AND AWARDS

Languages

JavaScript, TypeScript, C, C++, SQL, Java, C#, Rust, bash, Python, WebAssembly, LaTeX, Verilog, Go, OCaml, x86/AArch64/RISCV64 Assembly

Tools

React, React Native, gdb, git, docker, Ghidra

Competitions

1st Place CCDC SW Regional 2021
USACO Platinum Qualifier
2nd Place BSidesSF CTF 2022
1st Place TAMUHack CTF 2022
1st Place SunshineCTF 2019