

# 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 using a K8s cron job written in **Go**, allowing for a reduction in certificate validity period by **50%**
  - Using **Go**, implemented state-of-the-art performant cryptographic signing support within a centralized cryptography service, with support for **Go**, **Python**, and **Node.js** clients
- 05/2021 – 08/2021 **Security Engineer Intern, Praetorian Security**
- Proposed and prototyped **GoKart**, a new open-source 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, involving exploit development and client communication
- 05/2020 – 08/2020 **Software Engineer Intern, Microsoft, M365 Core Security**
- Implemented an end-to-end **ML recommendations system** for data-center access control
  - Performed feature selection and model evaluation using **scikit-learn** and **MS SQL**
  - 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, contributing thoughtful code reviews, database schemas, and a custom document storage format

## PROJECTS

- 06/2021 – present **Ghidra-Wasm, Open-Source Reverse-Engineering for WebAssembly**
- Developed the first fully-featured WebAssembly plugin for **Ghidra**, a reverse-engineering framework maintained by the NSA, enabling full disassembly and decompilation
  - Collaborated with other open-source contributors remotely for plugin's 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 several novel challenges for an international 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

### Tools

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

### Competitions

1st Place CCDC SW Regional 2021  
2nd Place BSidesSF CTF 2022  
1st Place TAMUHack CTF 2022  
1st Place Texas A&M Attack-Defense CTF 2019  
1st Place SunshineCTF 2019