JOSHUA (HAWON) CHO

Interim TS Clearance | TS Clearance in progress

hawonc@umich.edu   714-659-9494   pontrolcanel.top   linkedin.com/in/joshuahcho   github.com/hawonc

EDUCATION

Univeristy of Michigan, Ann Arbor   Ann Arbor, MI (2022-2026)

Double Major: Computer Science / Statistics

- **Honors and Awards:** Deloitte CTC Finalist, NHTSA CyberAuto 2024 CTF Winner, NSA CodeBreaker 7/7
- **Activities:** WolvSec Cyber Security Club, UofM ICPC, Korean-American Scientists/Engineers Association
- **Coursework:** Data Structures/Algorithms, Operating Systems, Computer Organization, Computer Security, Election Cybersecurity, Linear Algebra, Principles Of Analysis

WORK EXPERIENCE

Software Engineering Intern | Northrop Grumman Space Systems ↗   Dulles, VA (2024)

- Conducted standardized tests with various pre-trained and fine-tuned AI models, achieving a **27% increase** in code and branch coverage from the initial model choice.
- Processed over **500,000** lines of code and **10,000** test cases to create a comprehensive dataset with the purpose of enhancing **transfer learning and fine-tuning** of pre-trained models.
- Collaborated with Security Engineers to mitigate known ML vulnerabilities, resulting in a **80%** detection rate.
- *Further details restricted by NDA*

Product Development Engineer | Block Harbor Cybersecurity ↗   Troy, MI (2023-2024)

- Developed a web API for **UDS/Ethernet/Bluetooth** tests on physical and simulation vehicles hosted on AWS EC2 containers for integration with the Vehicle Security Engineering Cloud (VSEC)
- Increased physical connected vehicles/test benches by **300%**, reduced communication delay from **17ms to 2ms**
- Merged newly written code with pre-existing OSS in C and Python order to link up CAN network traffic from a physical vehicle to end users around the world
- Fixed 20+ bugs based on user feedback, improving platform stability and UX for over **1000 active users**.

Computer Consultant I | Mechanical Engineering Department ITS   Ann Arbor, MI (2022-2023)

- Developed a Python script for handling data sanitization, improving average ticket resolution time by **30%**
- Managed and resolved over **150 tickets** filed by students and staff, configuring VPNs, troubleshooting group policy issues, and completing orders through university-approved retailers.

PERSONAL PROJECTS

Medi-Vault ↗   (September 2024)

- Developed an offline medical equipment tracking system for iOS using **Swift**, integrated with a **Flask/MariaDB** server for data synchronization, allowing for merges/exports/imports with **under 300ms delays**
- Implemented OCR using **VisionOCR**, with an average offline OCR processing time of **under 2 seconds**.

WolvCTF ↗   (March 2023/2024)

- Wrote cybersecurity challenges for WolvSec CTFwith **1500+ participants** attempting and solving the challenges designed and implemented through **Docker, Kubernetes, GCloud Hosting, and CTFtime**

PassLess ↗   (September 2023)

- Led the development process of a **cryptographically** secure web-based Password Manager
- Implemented frontend with **TypeScript**, **React**, and **Tailwind**. Client-Side Encryption with **WebAuthn**, **MySQL** as a database, and **PBKDF2** as our hashing function.

Raspberry Pi Home Server ↗   (In Progress)

- Hosting a personal portfolio **Node.js** server and email server run through **PM2** and **Cloudflare DDNS**
- Dockerized an **Alpine Linux** based Wireguard VPN server hosted within the pi, improving connection speeds by **50+ Mbp/s** compared to commercial solutions

SKILLS

Languages - C++, Python, Rust, Java, C, JavaScript/TypeScript, SQL, Bash/Shell, Assembly, R
Technologies - <u>Dev Tools</u>: Git, Jira, Confluence, Kubernetes, Teraform, WireGuard, WireShark, VM/Hypervisors
                      <u>Frontend</u>: React, Next.js, , Cypress.js, Angular, Swagger.js, Flask, Figma
                      <u>Backend</u>: Node.js, Django, PM2, Docker, AWS/GCP, RHEL, Debian, Nginx, PostgreSQL, MySQL
                      <u>ML</u>: PyTorch, TensorFlow, NumPy, Pandas, LightGBM, Ollama
Certifications - Security+ 601CE