IVY FAN-CHIANG

3rd Year Computer Science Student @ University of Waterloo, Security Researcher & Developer

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EDUCATION

Candidate for Bachelor of Computer Science (Co-op)   📅 September 2022 – April 2027 (Expected)
University of Waterloo   ⚲ Waterloo, Ontario
- **Awards**: Carson Family Scholarship in Computer Science ($10,000), Dean's Honour List

TECHNICAL SKILLS

Security Skills: Digital Forensics, Linux Hardening, Reverse Engineering, Incident Response, Computer Networking
Security Tools: Ghidra, Snort, Binary Ninja, Datadog, Palo Alto Panorama, Identity Access Management (IAM), VirusTotal Enterprise
Programming Languages: Python, C++, Java, JavaScript, Bash, SQL, HTML/CSS
Frameworks and Tools: Django, Flask, FastAPI, SQLAlchemy, Pandas, NumPy, Click, Git/GitHub, Jupyter
Infrastructure: Linux Administration, Nix/NixOS, Amazon Web Services (AWS), PostgreSQL, Ansible, Terraform, Azure DevOps

EXPERIENCE

Malware Research Intern   📅 January 2025 - August 2025
Trend Micro   ⚲ Toronto, Ontario
- Performed **threat intelligence** hunting using VirusTotal and other platforms to find novel active malware, **reverse engineered** malware samples to investigate functionality, developed **Snort** network detection rules, and wrote **technical reports** and threat advisories, detailing findings.
- Used **Python Flask**, **SQLAlchemy**, and **YARA-X** to build a web platform for managing and editing YARA rules, running quality assurance on rules, and scanning malware samples, speeding up coverage testing and enabling the development of high quality rules in the malware research team.

Vulnerability Research Intern   📅 May 2024 - August 2024
Trend Micro   ⚲ Toronto, Ontario
- Developed proof-of-concept exploit code for **SQL injection**, **remote code execution**, and man-in-the-middle attacks in various security and infrastructure products and developed **Snort** detection rules for attacks.
- Reverse engineered software to find vulnerability root causes and wrote **technical reports** detailing vulnerability details.

DevSecOps Engineer - Co-op Student   📅 September 2023 - December 2023
HOOPP (Healthcare of Ontario Pension Plan)   ⚲ Toronto, Ontario
- Deployed a high availability Palo Alto firewall cluster to **AWS** and configured deep packet inspection capabilities using **Terraform** scripts and **Azure DevOps** pipelines.
- Developed **Python Lambda** functions for automated **IAM** access key rotation in applications like Panorama, Splunk, and Service Now.

Software Engineering Intern - Backend & Security   📅 January 2023 - April 2023
Dropbase   ⚲ Toronto, Ontario (Remote)
- Audited the **Python FastAPI** and **SQLAlchemy** powered backend codebase to find and develop mitigations for vulnerabilities like SQL injection.
- Designed and developed secure 3rd party API key credential storage and hardened permissions on various product API endpoints.
- Wrote the company's **secure programming policy** and technical guides on mitigating vulnerabilities like SQLi during development.

ACHIEVEMENTS

CyberSci Cybersecurity Challenge 2024-2025 - 1st in Canadian National Finals
- CyberSci is a capture-the-flag security competition for university teams across Canada. Competed in Toronto Regionals and National Finals with the UWaterloo team as a reverse engineering, digital forensics, and hardware security specialist.

European Cybersecurity Challenge 2024 - First in Guest Teams, Team Canada Competitor
- Competed with Team Canada at the ECSC 2024 capture-the-flag security competition in Turin, Italy as a digital forensics, traffic analysis, and hardware security specialist. Team Canada placed first in the guest (non-European) teams category of the CTF.

Industry Certifications
- CompTIA Security+ (SYO-701, Dec 2023), AWS Certified Cloud Practitioner (CLF-C02, Oct 2023)

PROJECTS

⬡ Nixpkgs Package Maintainer
- Maintainer of packages for various reverse engineering tools, optimizes software for NixOS, and reviews on the pull requests of new maintainers.

⬡ Scalpyl and ⬡ pycDisGUI
- GUI and scripting interface for **Python bytecode** reverse engineering, providing easy access to a variety of Python disassembler, decompiler, and unpacking tools. Developed to enable easier **reverse engineering** of compiled Python programs during CTFs and malware analysis.