AARON TI

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A results-driven software developer and cybersecurity specialist with strong expertise in full-stack development, DevSecOps, malware analysis, and reverse engineering. Experienced in building scalable software solutions and developing security tools for threat detection, vulnerability management, and automation. Passionate about applying deep technical knowledge to solve complex problems across software engineering and cybersecurity domains.

SKILLS

- Software Development (Full Stack, Backend, Systems)
- Malware Analysis & Reverse Engineering
- DevSecOps & Security Automation
- Cloud Architecture (AWS), Docker, Kubernetes
- Programming (Python, C/C++, Rust, Golang, Java, JavaScript, Nim, Assembly)
- XR, 3D Design, VR/AR/MR App Development

EXPERIENCE

Coding

- Python, C, C#, C++, Rust, Golang, Javascript, Java, Assembly, Nim

Technologies/Environment

- Windows, Linux, OpenGL, Web Frameworks, Docker, Kubernetes, ROS 2, OpenCV, Huggingface, CI/CD, AWS, Cinema4D, Blender, Unity, Unreal Engine

EMPLOYMENT HISTORY

Cybersecurity Engineer at Centre for Strategic Infocomm Technologies (CSIT) **2024 – 2025**

- Developed custom Linux-based user-mode and kernel-mode security tools utilizing eBPF and kernel APIs to detect and mitigate malware threats.
- Engineered low-level endpoint protection software capable of real-time process monitoring, behavioral analysis, and malware defense.

Software & Security Engineer at watchTowr **2024**

- Designed and deployed scalable honeypot systems using T-Pot with ELK Stack integration for real-time threat monitoring and incident response.
- Automated security validation and adversary emulation workflows, reducing manual effort and improving vulnerability coverage.
- Leveraged LLMs (GPT-3.5) through finetuning and prompt engineering to automate complex cybersecurity tasks and streamline operations.

DevSecOps Engineer at GuardRails **2022**

- Built and integrated automated static analysis tools (Semgrep) into CI/CD pipelines, enhancing secure software development practices.
- Implemented security guardrails that proactively detected and mitigated vulnerabilities in production codebases, aligned with OWASP Top 10.

Threat and Incident Specialist at MINDEF - Military Security Department (MSD) **2020 – 2022**

- Conducted malware reverse engineering, threat hunting, and forensic investigations on advanced persistent threats (APT) targeting critical infrastructure.
- Developed internal forensic and malware analysis tools to automate detection of obfuscation, command-and-control patterns, and payload behavior.
- Designed and executed incident response procedures and created mitigation plans to remediate security breaches.

Software Developer at Helloholo **2020 – 2021**

- Built interactive XR applications integrating Virtual Reality (VR), Augmented Reality (AR), and Mixed Reality (MR) for enterprise and commercial clients.

- Led the development of Oculus-based simulations and interactive AV software to support digital transformation initiatives.
- Explored novel software frameworks for XR, enhancing deployment across multiple hardware ecosystems.

Research Software Engineer at Institute of High Performance Computing (IHPC) A*STAR **2017 – 2018**

- Developed high-performance simulation software to analyze electromagnetic wave behavior in complex materials.
- Collaborated with research teams to optimize computational models using parallel computing techniques.

PROJECTS

Badminton AI Robot **2023 – 2024**

- Designed and implemented a stereo vision system using calibrated multi-camera setups for real-time shuttlecock tracking.
- Developed object detection models and ROS 2-based communication systems to enable predictive robotic movement for shuttlecock interception.
- Integrated machine learning with robotics to improve response accuracy.

SourceSync **2022 – 2023**

- Built a source-to-binary mapping tool that aligns Ghidra decompiled pseudocode with original source code for vulnerability analysis.
- Engineered AST comparison algorithms with fuzzy hashing to accurately detect matching code segments and aid reverse engineering workflows.

obfDetect **2021**

https://github.com/mcdulltii/obfDetect

- Developed a tool for automatic detection of code obfuscation, control-flow flattening, and function anomalies in binary executables.
- Utilized IDA Pro scripting and AST-based heuristics to improve malware analysis efficiency and detection capabilities.

COURSES / CERTIFICATIONS

AWS Academy Cloud Foundations

- Gained comprehensive knowledge in cloud computing, AWS architecture, security models, and cost management.

AWS Academy Cloud Architecting

- Practical understanding of designing secure and scalable AWS cloud infrastructures, preparing for AWS Certified Solutions Architect – Associate certification.

Advanced Malware Analysis Techniques by Kaspersky

https://xtraining.kaspersky.com/courses/advanced-malware-analysis-techniques

- Conducted advanced malware analysis including decrypting payloads, reverse-engineering obfuscation techniques, and extracting IOCs.
- Generated in-depth threat reports for incident response and forensic investigations.

Targeted Malware Reverse Engineering by Kaspersky

https://xtraining.kaspersky.com/courses/targeted-malware-reverse-engineering

- Reverse-engineered malware used by APT groups, dissected exploits, and analyzed obfuscated payloads across Windows and Linux systems.
- Investigated malware written in C, C++, .NET, Delphi, Powershell, and JavaScript for both x86 and x64 architectures.

Reverse Engineering 101 by Kaspersky

https://xtraining.kaspersky.com/courses/reverse-engineering-101

- Mastered foundational reverse engineering concepts including static analysis, disassembly, and understanding compiler-specific artifacts.

EDUCATION

Singapore Institute of Technology and University of Glasgow **2022 – 2025**

- Bachelor of Science in Computing Science, First Class Honours (Full-time)
- Focused on advanced software engineering, cybersecurity, cloud infrastructure, and AI-driven technologies.

Singapore Institute of Technology **2019 – 2022**

- Bachelor of Science in Information Security (Work-Study Programme under Cyber NSF Scheme)
- Specialized in offensive security, malware reverse engineering, full-stack development, and security automation.
- Participated actively in Capture-The-Flag (CTF) competitions at national and international levels.

Anglo-Chinese Junior College **2017 – 2018**

- GCE A-Levels (Further Mathematics, Mathematics, Physics)
- Led computing projects involving real-time computer vision, shader programming, and 3D graphics.
- Designed 3D models, simulations, and interactive software as part of the computing club.