Jason **Tu** 涂世昱

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Summary

I earned my Master's degree in Computer Science from National Taiwan University in 2021. During my studies, I took a Computer Security course where I gained hands-on experience with binary exploitation, reverse engineering, and web exploitation through Capture The Flag (CTF) challenges. These exercises introduced me to tools like GDB, IDA Pro, and x64dbg. I began my career as a software engineer at Trend Micro, focusing on networking. Over time, I gradually learned knowledge about TCP/IP, network analysis by tcpdump, and gained extensive experience in network development and C/C++ programming and debugged in various Linux environments from busybox-based system to mainstream Linux distributions like Ubuntu. I enjoy solving complex problems and am always committed to investigating and identifying root causes with persistence and attention to detail.

Keywords

C/C++ Programming, Network Engineering, Linux Networking, iptables, Netfilter, NFQUEUE, GDB, Linux System Programming, Packet Inspection, TCP/IP, Embedded Linux, Binary Exploitation, Reverse Engineering

Work Experience

Network Security Development   CTOne (a subsidiary of Trend Micro)
Project: Secure Mobile Access Cloud (SMAC)   *Feb 2024 - Now*

- Developed VPN functionalities with WireGuard, iptables, and iproute commands.
- Ported solution to various platforms, from OpenWRT-based routers to containerized environments.

Electric Vehicle ECUs Firmware Flashing   VicOne (a subsidiary of Trend Micro)
Project: xSUMO   *Jul 2024 - Oct 2024*

- Implemented ECU firmware flashing procedures using the UDS protocol in C.

Windows Application Development   Trend Micro
Project: Cleaner One Pro (Windows)   *Mar 2023 - Feb 2024*

- Developed backend functionality using the Win32 API.
- Developed ui with Angular framework in Typescript.

Network Security Development   Trend Micro
Project: Home Network Security (HNS SDK)   *Nov 2021 - Mar 2023*

- Ported the HNS solution, including packet inspection engine and core process into ISP router devices.
- Resolved issues related to iptables, Linux system functionalities, conntrack, cross-compilation, and more.
- Improved packet inspection performance by bypassing redundant packets from the same connection with conntrack.

Education

Master of Computer Science   Sep 2018 - Feb 2021
National Taiwan University   *Completed*

Bachelor of Department of Photonics   Sep 2013 - Jun 2017
National Cheng Kung University   *Completed*