

# Chih-Hsuan Yang (楊志璿)

CONTAINER SECURITY RESEARCHER • DevSecOps

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## Education

### National Sun Yat-sen University (NSYSU)

B.S. IN COMPUTER SCIENCE AND ENGINEERING

- Awardee of scholarships by information security
- MOST Research Grant for Undergraduate Students 獲科技部大專學生研究計畫補助
- **Best Paper Award** [The Container Security in Healthcare Data Exchange System](#)

Kaohsiung, Taiwan

Sep. 2018 - Jun. 2022

### Information Security Lab (NSYSU)

RESEARCHER

Kaohsiung, Taiwan

Jul. 2019 - Jun. 2022

## Projects

### Facebooc

MAIN DEVELOPER/LEADER

- A Facebook implementation in GNU C
- Familiar with **Copy-on-Write**, **aio**, **SOLID pattern**, **madvice**, **zero-copy** in C
- Familiar with **gdb**, **Address sanitizer**, **Valgrind** in debugging
- Familiar with **Makefile**, **GitHub CI** to build and release
- <https://github.com/25077667/facebooc>

GitHub

Apr 2022, present

### TCP-over-UDP

MAINTAINER

- Implement TCP over UDP in **Modern C++**
- Familiar with **template meta-programming**, **RVO**, **SSO**, **Object compile time optimization**
- Familiar with **Virtual table**, **RAII** ... for **C++ internal**
- Familiar with **Timerfd** in Linux
- Familiar with **CMake** to build and release
- <https://github.com/25077667/TCP-over-UDP>

GitHub

Jun 2022, present

### The Container Security in Healthcare Data Exchange System

MAIN DEVELOPER/LEADER

- **Best Paper Award** in CISC2022
- Bachelor's degree graduation project
- Using **eBPF**, **seccomp**
- Familiar with **cgroup**, **namespace**, **LSM**, **seccomp** in Linux
- [https://github.com/25077667/Container\\_Security/](https://github.com/25077667/Container_Security/)

National Sun Yat-sen University

Feb 2021, present

### High Scalability Wireguard VPN Server

MAINTAINER

- Using docker swarm to connect containers in different hosts
- Cost \$1000 NTD in hardware to serve over **5000** clients **concurrently**
- Using **Prometheus**, **Grafana**, **Wireguard**, **Docker-compose**, **fail2ban**, **ufw**
- [https://github.com/25077667/scalable\\_wg](https://github.com/25077667/scalable_wg)

National Sun Yat-sen University

Apr 2021, Jun 2021

### NTRU Booster on FPGA

DEVELOPER

- Using **NTT** twiddle factor to **parallelly** calculate polynomials
- Using **Object-Oriented-C**
- Research at the same time: [Paper](#)

National Sun Yat-sen University

Fall 2020

## Skills

<b>General</b>	Modern C++(17), Modern C(11), Python 3, Golang, Shell script, vim
<b>DevSecOps</b>	GitHub Action, Nginx, Docker, Jenkins, Prometheus
<b>Linux</b>	Container, seccomp, LSM, Crontab, UFW, System Programming
<b>Languages</b>	Mandarin (native), English (TOEFL iBT 55), Taiwanese

## Work Experience

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### Department of Computer Science and Engineering, NSYSU

OPERATING SYSTEM TEACHING ASSISTANT

- Familiar with **Booting process**, **sched\_entity**

*Kaohsiung, Taiwan*

*Feb. 2021 - Jun. 2022*

### Information Security Club, NSYSU

CLUB'S FOUNDING PRESIDENT

- R&D, Server Maintainer
- Teaching, Communicator
- Leaded club growing to **100 people**

*Kaohsiung, Taiwan*

*Sep. 2019 - Jun. 2021*

### Campus Dormitory Promote Association (CDPA), NSYSU

NETWORK MANAGER

- Network manager, R&D

*Kaohsiung, Taiwan*

*Sep. 2019 - Jun. 2020*

### Telecom Technology Center

INFORMATION SECURITY ENGINEER INTERN

- Develop an automatic apk vulnerability detection toolchain.
- Study static analysis tool which look for bugs in Java code.(SpotBugs)
- Familiar with **shell script**, **reverse engineering**

*Kaohsiung, Taiwan*

*Jun. 2019 - Aug. 2019*

## Writing

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### The Linux Kernel Module Programming Guide

CONTRIBUTOR

- The Linux Kernel Module Programming Guide (updated for 5.x kernels)

*GitHub*

### Debian Reference

CONTRIBUTOR

- This Debian Reference is intended to provide a broad overview of the Debian system as a post-installation user's guide.

*Debian Salsa*

### Linux Kernel Scheduler Internals

CONTRIBUTOR

- Demystifying the Linux CPU Scheduler

*GitHub*