Chia-An Lee

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EDUCATION

National Yang Ming Chiao Tung University   Sep. 2019 – Jul. 2021
Master of Science in Computer Science   *Hsinchu, Taiwan*

- Advisor: Jyh-Cheng Chen @ Wireless Internet Research and Engineering Laboratory

- Research focuses on 5G core network

National Chiao Tung University   Sep. 2015 – Jun. 2019
Bachelor of Science in Computer Science   *Hsinchu, Taiwan*

- Coursework: Computer Network, Operating System, System & Network Administration, Computer Security

WORK EXPERIENCE

Lab Server and Network manager   Jan. 2020 – Jan. 2021
Wireless Internet Research and Engineering Laboratory   *Hsinchu, Taiwan*

- Manage the server and network in lab. Including 6 servers (3 Proxmox, 1 VMWare, 1 Storage, 1 bare Linux), 2 Juniper switches, 10G switch, IP KVM, UPS, Aruba AP, etc.

- Provide services such as NFS, Samba, Wireguard VPN, NAT, Discourse forum, VM platform, etc.

Team Lead (Network Team)   Feb. 2018 – Sep. 2019
Computer Center, Department of Computer Science, National Chiao Tung University   *Hsinchu, Taiwan*

- Lead the network team to host all the networking of our department. Including service intra-net design and deployment, 3-layer network architecture, static and dynamic routing, IPv6, network high availability, and VPN networking.

- Lead our team to deploy monitoring and alarming systems for network and service via Nagios, Cacti, and LibreNMS.

- Host the co-location center for our department. Including once center rebuild and server migration.

Part-Time (Linux Team, PC Team)   Feb. 2018 – Sep. 2019
Computer Center, Department of Computer Science, National Chiao Tung University   *Hsinchu, Taiwan*

- Managing Linux workstations. Routine jobs include package updating, LDAP usage, log watching, abnormal user behavior checking, etc.

- Managing Windows PC. Deploy OS via Clonezilla and application via Ansible. Fix hardware issues.

Intern (Container Platform)   Jul. 2018 – Dec. 2018
National Center for High-Performance Computing   *Hsinchu, Taiwan*

- Propose a lightweight resource dispatching system base on Docker container and NVIDIA GPU. Make the AI PaaS provided by NCHC more flexible and scalable.

- Publish **"Implementation of lightweight GPU cloud computing AI platform"**, *TANET 2018*

Intern (Blockchain)   Jul. 2017 – Dec. 2017
National Center for High-Performance Computing   *Hsinchu, Taiwan*

- Maintaining a private Ethereum chain inside NCHC and testing smart contract on it.

Educational Project & Awards

Project free5GC   Jan. 2019 – Jul. 2021

An open-source 5G core network

- Develop the first open-source 5G core network project.

- Focus on the user plane function (UPF). Implement the N4 interface to receive rules from session management function (SMF) and add rules into user plane data forwarding process.

- Improve the performance of free5GC as my thesis: **Design and Implementation of a LowLatency and HighThroughput 5G Core Network**. In the thesis, port free5GC on the OpenNetVM platform reaches 11 times of throughput in user plane and one-half of latency in control plane communication.

NCTU CSCC Intranet Infrastructure   Jan. 2018 – Jan. 2019

Intranet design and implementation

- Redesign and deploy the service network of CSCC with an intranet infrastructure architecture. Including 2-layer network architecture, NAT, firewall, DMZ, HA, etc.

- Make the new network non-wasted on public IP resources, flexible, scalable, and more secure.

Awards

- ACM ICPC 2017 Asia Hua-Lien Regional Contest, Sep. 2017   Silver Medal

- ACM ICPC 2017 Asia Jakarta Regional Contest, Nov. 2017   Honorable Mention

- National Collegiate Programming Contest, Sep. 2017 14th Place

Skills

Programming Languages	C, C++, Go, Python, Shell Script
Professional Skills	Linux, Cisco, Juniper, IPv6, VPN, firewall, 5G, NFS, Docker, OS, Git, LaTeX