HSUEH YUAN, KU

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EDUCATION

Georgia State University   2023 - Present
MS, Computer Science

National Taiwan University of Science and Technology   2016 - 2020
BS, Computer Science and Information Engineering

Thesis Dissertations: Hsuehyuan Ku, Yuxiang Lin, and Shinming Cheng, "Spreading False Public Warning Messages through a Forged LTE Base Station", *CISC 2020*

SKILLS

Programming	C/C++, Golang, Python, JavaScript
Techniques	WebSocket, RabbitMQ, PostgreSQL, Redis, MongoDB, ELK, Docker/K8S, Nginx

WORK EXPERIENCE

TeamT5   Taipei, Taiwan
Backend Engineer   *Jun 2022 - Jul 2023*

- Implemented pytest-based unit and integration test extensions, significantly improving code quality and service reliability.

- Created a document system that automatically generates Swagger documentation and test environments for each pull request, streamlining the development process for other team members.

- Revamped the core service architecture, resulting in a 20~30% increase in QPS.

Ucfunnel   Taipei, Taiwan
Backend Engineer   *Apr 2021 - May 2022*

- Designed a product upload system with a message queue for efficient batch processing, enhancing user experience.

- Developed a live streaming service integrated with WebSockets, enabling real-time synchronization between Facebook Live and Chat, allowing seamless streaming on our platform.

- Implemented a webhook service customized to our customer's needs.

- Improved advertising search performance by 47% through Redis and lazy loading.

- Established CI/CD pipelines and implemented database failover clustering for enhanced development efficiency and system stability.

NICT   Tokyo, Japan
Internship   *Jan 2020 - Feb 2020*

- Designed and executed the development of visualization software and a scoreboard for the Capture The Flag(CTF) contest.

LEADERSHIP

Project Leader @ Ucfunnel   *Aug 2021 - Dec 2021*

- Led a cross-functional team comprising 3 engineers and 1 project manager in the development of an e-commerce platform.

- Oversaw the efficient allocation of both human and technical resources, optimizing team productivity and project outcomes.

Leader of Department Basketball Team @ NTUST *Sep 2018 - Jun 2019*

President of Student Association of Computer Science Department @ NTUST *Sep 2017 - Jun 2018*

- Co-hosted a university assembly with NTUST and successfully increased the Students' Association's budget by 20%.

- Used the increased budget to sign contracts with 15 nearby stores to provide student discounts.

PROJECTS

- **Talkaway (Startup Project)**: Led the design and development of an AI tutor. I am responsible for designing the overall system architecture, feasibility research, backend development, and partial mobile development.

- **Spoofing Alert (Thesis/Research Project)**: Establishing a malicious base station and leveraging open-source SDN (srsLTE) to implement SIB 10, 11, and 12 for sending simulated presidential alerts.

- **Policy Petition Website**: This is a website for petitioning against a specific policy, which includes campaign materials, and speech information. It is accessed by 1000+ users.

- **Red (URL Shortening Service)**: Built a URL shortening service with an active user base of over 100, utilizing Vue.js, FastAPI, Redis, and PostgreSQL.

- **Lingram**: A Telegram bot that can transfer Line stickers to Telegram stickers.

- **Phorm**: This is a Python package that is designed to fill out Google Forms.

- **Lightweight Web Server**: Created a web server and common gateway interface using C.