YU-CHIAO JHAUNG

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B5G/6G Researcher/Engineer

As someone deeply engaged in the field of B5G/6G technologies, I have been continually delving into these areas and plan to further my research in future satellite communications. As an agile team leader, I am committed to sharing knowledge and cultivating communication and empathy within my team. Under my leadership, our lab team successfully established an AI/ML platform in the 6G project of the National Science Council, which was highly commended. These experiences have bolstered my confidence, and I look forward to achieving significant accomplishments in interdisciplinary integration.

SKILLS

Architecture: B5G/6G, Cloud Infrastructure, Microservices, Edge Computing

Methodology: Sustainable Architecture Design, 4+1 Architectural View Model, DevOps, MLOps

Software: Back-End, AI/ML, Data Analysis, Front-End

Firmware: Embedded AI Devices, FMCW Radar System

Programming language: Python, Go, C, C++, Java, Javascript, PHP

WORK EXPERIENCE

B5G Researcher | Internship
Dec 2022 - Present

ONYX Healthcare Inc.
Taiwan, Taipei

- Research on OTA (Over-The-Air) transmission measurement methods
- Analysis of 5G network system architecture

Full-Stack Engineer | Internship
Sep 2022 - Dec 2022

Coretek LLC.
United States, Las Vegas

- Integration of Jira, Tempo, and Slack into a third-party application
- Established a SaaS by deploying to Heroku and integrating with PostgreSQL on AWS EC2

Data Analyst | Internship
Jun 2020 - Oct 2020

Wavenet Technology
Taiwan, Taipei

- Responsible for maintaining and optimizing a voting system using containerized Laravel PHP
- Utilized Google Analytics for data collection, preprocessing, and analysis of click-through rates

Firmware Engineer | Internship
Jul 2020 - Sep 2020

Silicon XPandas
Taiwan, Taipei

- Modified the kernel of a device to establish I2C and SPI connections with System-on-Chips FPGA
- Employed Python's Locust tool to conduct stress tests on the system

PROJECTS

6G Open Integrated Optical and Wireless Prototype System - AI/ML Platform
Sep 2022 - Jun 2024

National Science and Technology Council (NSTC)

Project Highlights:

- EuCNC, Belgium (June 2024): Demonstrating AR/VR applications based on the 5G Core Network and srsRAN
- COSCUP Conference (July 2023): Presented the concept of the developed AI/ML platform
- Platform Development: Led the team in developing a sustainable AI/ML platform from scratch

Tech Stack:

- Heterogeneous Network: O-RAN, WAN, LAN
- Network Funtion: UFW, OpenVPN, Ngrok, Fiddler
- IaaS: VMware, GCP VM, AWS EC2, Linode
- PaaS: Docker, Kubernetes, KubeFlow
- SaaS: Kafka, Kong, Cassandra, MinIO, Harbor, Grafana, Prometheus
- Full-Stack Development: Next.js, Django, PostgreSQL, Redis, Swagger, FastAPI

AI/ML-based Gesture Recognition on Edge Devices
Sep 2021 - Sep 2022

Alltek Technology Corp.

Project Highlights:

- Model Performance: Accuracy: 99.75%, Recall: 99.34%, Precision: 98.63%
- Developed a cross-compilation toolchain (Virtual Machine, Docker) and runtime (Python, C++)
- Designed an image recognition system and a GUI system for data collection and labeling

Tech Stack:

- Training Framework: TensorFlow, TensorFlow Lite
- Cross-platform: ARM, X86, NPU
- AI Methodology: Supervised Learning, CNN, RNN, LSTM, Bi-LSTM
- Sensor: 60G FMCW Radar
- Labeling Tools: PyQt, OpenCV

Android in Docker
Apr 2021 - Dec 2021

Silicon XPandas

Project Highlights:

- Enhanced network security by implementing a VPN and utilizing Harbor as a private image registry
- Addressed embedded storage limitations by mounting the Android system as an iSCSI block to ARM work nodes
- Developed a mobile projection application, achieving end-to-end compression transmission

Tech Stack:

- Embedding: RK3399, Raspberry Pi
- Operating System: Debian, Ubuntu
- Network Storage: NFS, SMB, iSCSI
- Container Management Platform: Kubernetes, K3s
- Mobile Application Development: Media Projection using Java

Sentiment Analysis based on NLP in Social Media
Oct 2020 - Jan 2021

Silicon XPandas

Project Highlights:

- Utilized Google BERT as a pre-trained model for fine-tuning, achieving better results than AWS Comprehend
- Involved in word processing including symbol filtering, sentence segmentation, and keyword extraction
- Analyzed and determined the content of comments on Facebook fan page posts

Tech Stack:

- AI/ML Model: Google BERT, jieba, ckip-transformers
- SaaS: AWS EC2, AWS Comprehend
- Web Crawling Tools: Selenium, BeautifulSoup4

EDUCATION

Ph.D. in Electronic and Computer Engineering
National Taiwan University of Science and Technology
Sep 2020 - Oct 2024

Master's in Electronic and Computer Engineering
National Taiwan University of Science and Technology
Sep 2019 - Sep 2020

Direct Entry Ph.D. Program

Bachelor's in Electronic and Computer Engineering
National Taiwan University of Science and Technology
Sep 2015 - Jul 2019

AWARDS

112th Outstanding Youth on the Campus of NTUST
Dec 2023

National taiwan university of science and technology

112th Outstanding Youth of the ECE, NTUST
Dec 2023

National taiwan university of science and technology

PUBLICATIONS

Jhuang, Y. C., Lin, Y. M., Zha, C., Leu, J. S., & Köppen, M. (2022). "Implementing a Hand Gesture Recognition System Based on Range-Doppler Map." Sensors, 22(11), 4260