Yu-Chung Cheng

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Objective

From graduate research to roles in AI startups and system software development, my experience has equipped me with a strong foundation to pursue research in AI, with a keen interest in multimodal approaches using image and auditory data in videos, ready to significantly contribute to innovation in this field.

EDUCATION

Virginia Tech
Master's in Computer Science, AI 2023 - Present
Courses: Data Analytics, Introduction to Artificial Intelligence, Introduction to Deep Learning, Information Retrieval, Advanced Machine Learning, Learning-based Computer Vision

National Tsing Hua University
Master's in Computer Science, Network Optimization 2014 - 2016
Thesis: Performance Improvement of OpenFlow Switch with Queue and Per-port Cache

Tamkang University
Bachelor's in Information Management 2011 - 2014
Capstone Project: Restaurant Ordering App

RESEARCH EXPERIENCE

National Tsing Hua University
Research Assistant 2014 - 2017

- Researched hardware-software co-design for OpenFlow switch enhancements in SDN, focusing on queue and cache optimizations, and delved into virtualization and heterogeneous computing, guided by Prof. Youn-Long Lin

PROFESSIONAL EXPERIENCE

Deep Sentinel Inc. - Pleasanton, CA/Taipei March 2021 - November 2022
Senior Software Engineer

- Involved a real-time object detection system with our object detector and tracker, enhancing system performance
- Developed cloud-based microservices on GCP, emphasizing scalable infrastructure for real-time streaming
- Enhanced data storage and retrieval processing for efficient training and deployment in large-scale AI systems

RealTek Inc. - Taipei September 2020 - March 2021
Senior Software Engineer

- Designed a memory-efficient key-value database for power management storage
- Mentored new engineers in systems engineering and best practices

RealTek Inc. - Taipei April 2017 - September 2020
Software Engineer

- Enhanced networking performance and memory management in embedded systems
- Developed a cross-OS message communication interface to streamline device interactions
- Optimized toolchain, such as LLVM, post-linker, and bootloader, to achieve lower memory utilization

ACADEMIC EXPERIENCES

Teaching Assistant **National Tsing Hua University**

- Digital Logic Design Fall 2015
- Programming Top Ten Important Algorithms in Python Spring 2016

Project **Virginia Tech**

- Data Augmentation in Image Segmentation with Diffusion Model Spring 2023
- Text Prompting in Generative AI (Conditional diffusion model) Spring 2023
- Cloud Data Computing with Neon (Database as a service) Summer 2023
- Data Infrastructure Team Leadership - DevOps for MLOps Fall 2023
- Multiple Object Tracking with GAN Fall 2023
- MaskGit for Image Generation with label Fall 2023

ADDITIONAL

- **Programming Languages** Python, C, C++, Rust, Java, Javascript, Lua, Scala
- **Technologies** Pytorch, TensorFlow, CUDA, OpenCV, Gstreamer, Docker, Kubernetes, Grafana, Git, Redis, Postgres, MySQL, ELK, Kafka, IoT protocols, DTLS/TLS, SDN, WebRTC, OS Kernel, Toolchains, Distributed System
- **Certifications** Machine Learning Foundations - Mathematical Foundations, Cryptography I, Machine Learning