Yuheng Wu

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Education

KAIST, Republic of Korea 2025.07 – 2028.07(expected)
Ph.D. candidate in School of Computing Advisor: Prof. Dongman Lee
- Research field: Collaborative Embodied Multi-agent System, Robotics

KAIST, Republic of Korea 2023.09 – 2025.07
Master in School of Computing Advisor: Prof. Dongman Lee
- Research field: AI for Multimedia Delivery System
- Thesis: How2Compress: Scalable and Efficient Edge Video Analytics via Adaptive Granular Video Compression

Shanghai Unviersity, China 2019.09 – 2023.07
B.Eng in Computer Science & Cyber Security Advisor: Prof. Chenhong Cao
- GPA: 3.83/4.0 (94.3/100), Rank: 1/27
- Thesis: The Design and Implementation of Configuration-Adaptive Iot Streaming with Deep Reinforcement Learning

Publication/Preprints

Collaborative Embodied Multi-agent System

LangCoop: Collaborative Driving with Language
CVPR 2nd Workshop on Multi-Agent Embodied Intelligent Systems (CVPR workshop), 2025
*Xiangbo Gao, **Yuheng Wu**, Rujia Wang, Chenxi Liu, Yang Zhou, Zhengzhong Tu*
- introduce **LangCoop**, a new paradigm for collaborative autonomous driving that leverages natural language as a compact yet expressive medium for inter-agent communication

Networked Multimedia Delivery System

Undisclosed paper
Under review of ACM Multimedia (MM) 2025
- Developed a fine-grained QP assignment scheme for video compression, optimized for object detection in urban surveillance. It is integrated into the H.264 codec, achieving up to 50.4% bitrate savings with less than 2% accuracy degradation. Demonstrate real-world development and real-time performance on Jetson Nano.

OctopInf: Workload-Aware Inference Serving for Edge Video Analytics
International Conference on Pervasive Computing and Communications (Percom) 2025
*Thanh-Tung Nguyen, Lucas Liebe, Nhat-Quang Tau, **Yuheng Wu**, Jinghan Cheng, Dongman Lee*
- main contribution: (1) implment the baseline - Jellyfish (RTSS 2022)

Research/Internship Experience

Neural Adaptive Live Video Analytics with Deep Reinforcement Learning 2022/06 – 2023/02
Intern at INSS Lab Advisor: Prof. Chenhong Cao
- Developed a simulation framework for RL-based video streaming configuration, optimizing (framerate, QP, resolution, and offloading target) across multi-source devices and edge clusters.
- Simulate network bandwidth through Mahimahi and enable fast-training by pre-profiling video statistics (compression efficiency improvement of different configuration knobs).

Awards & Honors & Funds

KAIST Scholarship 2023-2028
- Full scholarship awarded for academic studies

Academic Distinction Scholarship 2020 & 2021 & 2022
- Awarded for outstanding academic achievement during the academic year. Dean List

AI-Based Educational Environment Innovation Project 2024.08-2024.12
- Develop LLM-based Portal System for KAIST students

- Funded by KAIST with 10,000,000 KRW

Technical Skills

- Programming: python, C/C++11, golang(v1.19), rust(v1.76)
- AI frameworks: Pytorch, TensorRT
- Mathematics background: calculus, matrix analysis, applied probabilistic theory, information theory, number theory
- Languages: Chinese (Native), English (Fluent), Korean (Beginner), Japanese (Intermediate)