

Yuheng Wu

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Education

KAIST (Korea Advanced Institute of Science & Technology), Republic of Korea 2025.09 – 2028 (expected)
Ph.D. candidate in School of Computing Advisor: [Prof. Dongman Lee](#)

- Research field: Collaborative Embodied Multi-agent System, Autonomous Driving




KAIST (Korea Advanced Institute of Science & Technology), 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 – 2023
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

 paper  code  dataset

Collaborative Embodied Multi-agent System

[1] Background Fades, Foreground Leads: Curriculum-Guided Background Pruning for Efficient Foreground-Centric Collaborative Perception

Under review of ICRA, 2026

[Yuheng Wu](#), Xiangbo Gao, Nhat-Quang Tau, Zhengzhong Tu, Dongman Lee

- introduce FadeLead, a novel framework that leverages curriculum learning to encapsulate background context into shared foreground features, boosting the performance of collaborative perception in autonomous driving

[2] SafeCoop: Unravelling Full Stack Safety in Agentic Cooperative Driving

Under review of ICLR, 2026

- introduce *safecoop*, a unified aerial-assisted autonomous driving systems.

[3] AirV2X: Unified Air-Ground Vehicle-to-Everything Collaboration

Under review of ICLR, 2026

Xiangbo Gao, [Yuheng Wu](#), Fengze Yang, Xuewen Luo, Keshu Wu, Xinghao Chen, Yuping Wang, Chenxi Liu, Yang Zhou, Zhengzhong Tu

- introduce *AirV2x*, a unified aerial-assisted autonomous driving systems.



[4] LangCoop: Collaborative Driving with Language

CVPR 2nd Workshop on Multi-Agent Embodied Intelligent Systems **[Best Paper Award]**, 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



Multimedia Delivery System

[1] How2Compress: Scalable and Efficient Edge Video Analytics via Adaptive Granular Video Streaming

ACM Multimedia (MM), 2025

[Yuheng Wu](#), Thanh-Tung Nguyen, Lucas Liebe, Nhat-Quang Tau, Pablo Espinosa Campos, Jinghan Cheng, Dongman Lee

- 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.



[2] **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

[3] **OctoCross: Workload-Aware Request Offloading Scheduling in Cross-Camera Collaboration**
International Conference on Service Oriented Computing (ICSOC), 2025
Jinghan Cheng, Thanh-Tung Nguyen, Lucas Liebe, Yuheng Wu, Nhat-Quang Tau, Pablo Espinosa Campos, Dongman Lee

[4] **ApisRL: Parameter Adaptation Feedback for Multi-Objective Reinforcement Learning in Independent Multi-Agent Systems**
Under review of AAMAS, 2025
Lucas Liebe, Thanh-Tung Nguyen, Yuheng Wu, Dongman Lee

Research/Internship Experience

Neural Adaptive Live Video Analytics with Deep Reinforcement Learning2022/06 – 2023/02

Intern at INSS LabAdvisor: 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 Scholarship2023-2028

- Full scholarship awarded for academic studies

Academic Distinction Scholarship2020 & 2021 & 2022

- Awarded for outstanding academic achievement during the academic year. Dean List

AI-Based Educational Environment Innovation Project2024.08-2024.12

- 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)
- Languages: Chinese (Native), English (Fluent), Korean (Beginner), Japanese (Intermediate)