Chenglong Yu

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EDUCATION

Institute of Computing Technology, Chinese Academy of Sciences (ICT, CAS) Beijing, China
Master of Engineering in Computer Technology Sep. 2024 –Expected Jun. 2027
China University of Petroleum (East China) Qingdao, China
Bachelor of Engineering in Computer Science and Technology Sep. 2020 –Jun. 2024
GPA: 4.12/5 | **Rank:** 3/114(Top 3%)

RESEARCH INTEREST

Edge Intelligence, World Models, Reinforcement Learning, Diffusion Models, Knowledge Distillation

RESEARCH EXPERIENCE

Joint Task Offloading and Resource Allocation with Multi-Task Energy Control based on World Model-Guided Collaborative Multi-Agent Deep Reinforcement Learning

Independent Research Dec. 2023 - Nov. 2025

- **Proposed** a multi-task energy control constrained joint optimization scheme for the task offloading and resource allocation (MEC-JTORA) to maximize the terminal energy efficiency.
- **Designed** an error-corrected energy consumption model (ECECM) to allocate appropriate energy to tasks.
- **Developed** a World Model-guided Collaborative Multi-Agent Deep Reinforcement Learning (WM-MADRL) algorithm, leveraging the world model to accelerate convergence and guide policy exploration.
- **Achieved** a 36%∼89% improvement in convergence speed over baseline algorithms, and increased the total size of completed tasks and energy efficiency by 4∼9 times compared to systems with equal energy allocation.

Diffusion Model-Assisted Sample-Efficient Data-Free Knowledge Distillation

Independent Research Aug. 2025 - Present

- **Designed** an attention-constrained data augmentation method to guide the student model in effectively learning key knowledge from synthesized samples, improving learning efficiency while enhancing sample diversity.
- **Extracted** hard samples during the distillation process and reconstructed them using GLIDE for denoising. Utilized the generated images to perform a secondary distillation, further improving the student's accuracy.
- **Achieved** state-of-the-art (SOTA) accuracy on the CIFAR-10/100 datasets with the student model distilled via the proposed method.

PUBLICATIONS & PATENTS

- **C.Yu**, W. Xing, J. Shi, Y. Zhou and L. Liu, "Collaborative Multi-Agent Deep Reinforcement Learning for Joint Task Offloading and Resource Allocation with Long Term Energy Control," 2025 IEEE 102nd Vehicular Technology Conference (VTC2025-Fall), Chengdu, China, 2025, pp. 1-5.
- **C.Yu**, Y. Zhou, Y. Qi and J. Wang, "Joint Task Offloading and Resource Allocation with Multi-Task Energy Control based on World Model Guided Collaborative Multi-Agent Deep Reinforcement Learning," IEEE Internet of Things Journal (under review).
- Y. Zhou, **C. Yu**, J. Shi, Y. Qi, W. Xing, and L. Liu, "An Industrial Internet System for Resource Allocation Based on Collaborative Multi-Agents." Chinese National Invention Patent, Patent No.: CN202511002125.2.
- D. Tan, **C. Yu**, Y. Zhou, L. Liu, and J. Shi, "A Data Aggregation Method and System for Wireless Ad Hoc Networks." Chinese National Invention Patent, Patent No.: CN202411514682.8.

HONORS & AWARDS

- Outstanding Graduate of Shandong Province - 2024
- National Encouragement Scholarship (Three times) - 2021, 2022, 2023
- UCAS Academic Scholarship (Twice) - 2024, 2025
- Honors Bachelor's Degree, China University of Petroleum (East China) - 2024

TECHNICAL SKILLS

- **Technology stack:** Python, C, C++, Pytorch, Linux, Git, CUDA