Tianyu Tu (屠天宇)

+86 15715715195 meetnailtu30@whu.edu.cn

EDUCATION

Wuhan University 2022.09 – 2025.06

Computer Science and Technology Master's Degree Computer School Wuhan, Hubei

- Advised by Chuang Hu and Dazhao Cheng
- GPA: 92.6/100; Grade Ranking: 5/121; Wuhan University New Graduate Student Award 2022

Wuhan University 2018.09 – 2022.06

Software Engineering Bachelor's Degree Computer School Wuhan, Hubei

- GPA: 3.9054/4; Grade Ranking: 8/207
- The Second Prize Scholarship (2020); The Third Prize Scholarship (2019)

RESEARCH

Tackling Multiplayer Interaction for Federated Generative Adversarial Networks

- IEEE Transactions on Mobile Computing (CCF A); Second Author (my advisor is the first author)
- We observe that the vanilla federated system (especially non-i.i.d setting) deteriorates GANs training. We design four modules including grouping and regularizer to tackle the issues of gradient vanishing and mode collapse. We get an average improvement of 23.13% and 26.33% in terms of FID and NDB/K respectively, compared to three other state-of-the-art FL systems over three datasets with their corresponding GANs.

Towards Lifelong Unseen Task Processing with a Lightweight Unlabeled Data Schema for AIoT

- IEEE Internet of Things Journal (SCI Q1); First Author
- Lifelong learning system encounters data scarcity. Our designed modules use GANs to learn data distribution, generate unlabeled data, and then use self-taught learning to extract unlabeled data representations. We construct representation-label dataset via data representations. We achieve an 80% reduction in training loss and improved validation loss stability, compared to the original training on the Cityscapes dataset.

INTERNSHIP

Shuhai Lab at Huawei Cloud 2024.07 – 2024.10

Train Diffusion Transformers (DiT) and apply quantization to reduce noise and achieve super-resolution in 1-spp (samples per pixel) Monte Carlo images

PROJECT

Open Source Promotion Plan (OSPP) 2022 2022.06 – 2022.11

- Unseen task processing in the lifelong learning of KubeEdge-Sedna via GANs and Self-taught Learning
- Code has been merged into the main branch of KubeEdge-Ianvs
- Report on the 1st KubeEdge Academic Workshop 2022 (KEAW'22): A Scheme for Processing Unseen Tasks in KubeEdge-Sedna Based on GAN
- Post on KubeEdge WeChat Official Account: KubeEdge SIG AI：Data Generation and Self-taught Learning for Large Models

ADDITIONAL INFORMATION

- Huawei KubeEdge Rising Star Award 2023 2024.03

  CET-6: 601 (tested in 2020); TOEFL: 89 (tested in 2024)