Yulong Shi

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Education

Northeastern University 09/2024 - 06/2027
M.S. in Engineering, Biomedical Engineering
Guilin University of Electronic Technology 09/2020 - 07/2024
B.S. in Engineering, Measurement and Control Technology and Instruments

Publications

1. **PARDA: A Perceive-Act-Reflect-Distill Agent for Source-Free Unsupervised Domain Adaptation** First author
IEEE Transactions on Medical Imaging (IEEE TMI), 2026 · DOI: 10.1109/TMI.2026.3744091
Yulong Shi, Shijie Li, Ziyi Li, Lin Qi (corresponding author), Shouliang Qi, Ting Liu, and Wei Qian

2. **Search2Adapt: Multi-Agent Collaborative Tree Search for Source-Free Unsupervised Domain Adaptation** CCF-A, CORE-A* · First author
34th ACM International Conference on Multimedia (ACM MM 2026)

3. **Tell2Adapt: A Unified Framework for Source Free Unsupervised Domain Adaptation via Vision Foundation Model** CCF-A, CORE-A* · First author
IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR 2026)

4. **HEAL: Learning-Free Source Free Unsupervised Domain Adaptation for Cross-Modality Medical Image Segmentation** CCF-C, CORE-A · First author
The 36th British Machine Vision Conference (BMVC 2025)

5. **A3-DualUD: Source-Free Unsupervised Domain Adaptation via Anatomical Anchor Alignment and Dual-Path Uncertainty Denoising for Cross-Modality Medical Image Segmentation** IF 4.8, JCR Q1 · First author
Computer Methods and Programs in Biomedicine

Internship Experience

Huawei Intelligent Automotive Solution BU · Multimodal Foundation Model Engineer 06/2026 – 09/2026

- **ReinWAM.** Proposed a reinforcement post-training framework for World Action Models that optimizes the World Model, Action Expert, and their information coupling while keeping the pretrained backbone frozen. Introduced factorized credit assignment for World-Action coupling to prevent indiscriminate propagation of global rewards, mitigating safety degradation from shared credit. Achieved 91.1% PDMS on NAVSIM with consistent EP improvements.
- **JEV-Drive.** Designed a fast end-to-end planning framework combining single-step semantic decision-making with conditional diffusion. Built a 36-class orthogonal driving-intent codebook on Qwen3.5-0.8B. Independent Byte Token mapping enables answer-position logit-slice readout after a single prefill, avoiding autoregressive decoding latency. Injected Qwen instructions into DiffusionDrive through Cross-Attention KV, FiLM feature modulation, and classification-score bias to guide 20 anchors through two DDIM denoising steps and trajectory selection. Achieved 90.5 ms inference and 88.7% PDMS on NAVSIM using a single front-view input.

Research Experience

Perceive-Act-Reflect-Distill Agent for Source-Free Unsupervised Domain Adaptation
Reformulated SFUDA as closed-loop decision-making. Developed a VLM-driven agent to assess target-domain features and coordinate BiomedParse and SAM3 for pseudo-label generation, with anatomical reliability assessment and iterative correction to reduce error accumulation. Published in IEEE TMI.

Multi-Agent Collaborative Tree Search for Source-Free Unsupervised Domain Adaptation
Designed a Perceptor – Strategist – Executor – Evaluator framework and collaborative tree search over adaptation strategies. Developed a multimodal anatomy-aware reward integrating geometric descriptions and visual cues to improve search stability and pseudo-label quality. Accepted at ACM MM 2026.

Scholarships and Awards

National Scholarship 10/2025
First Prize, 10th National Biomedical Engineering Innovation Design Competition for College Students 07/2025
Outstanding Graduate of Guangxi Autonomous Region 05/2024
National Encouragement Scholarship 11/2022