Yi LIU

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Biography

Yi Liu is currently a master student at ADMIS Lab in Tongji University, supervised by Associate Professor Wengen Li. Before that, he received his bachelor's degree at Tongji University in 2024.

His research interest focuses on **diffusion models in computer vision**. He is now working to developing various efficient diffusion models for downstream tasks (e.g., image restoration, image generation, etc.). His prospective goal is to gain a rigorous understanding of diffusion models through profound mathematical principles while developing hardware-aware optimizations to accelerate these models. He is currently pursuing this dual-focused agenda.

Education

Tongji University Shanghai, China
Master of Computer Science and Technology *Sept. 2024 — Mar. 2027*
- Cumulative GPA: 95.18/100

Tongji University Shanghai, China
Bachelor of Computer Science and Technology *Sept. 2020 — Jul. 2024*
- Cumulative GPA: 4.65/5.0 (91.5/100) | Second and Third Prizes of the Outstanding Student Scholarship

Publications

- [CVPR 2025] **Yi Liu**, Wengen Li, Jihong Guan, Shuigeng Zhou and Yichao Zhang. "Effective Cloud Removal for Remote Sensing Images by an Improved Mean-Reverting Denoising Model with Elucidated Design Space".

Experience

Cloud Removal Based on Generative Models ADMIS Lab, Tongji University, Shanghai
Project Leader Advised by Assoc. Prof. Wengen Li *Oct. 2023 — Present*
- Conducted **systematic analysis** of 100+ top-tier conference/journal papers, completing a thorough technical review and bottleneck problem analysis for diffusion models in remote sensing cloud removal tasks.
- Proposed **a novel cloud removal diffusion model** with modular framework addressing pixel-level inconsistency, module coupling issues, and mono/multi-temporal compatibility, achieving **SOTA** performance.
- **First-author paper** accepted to appear at CVPR 2025.

Compressed Image Reconstruction (Low-Level Vision) SCI Lab, Westlake University, Hangzhou
Visiting Student Mentored by Prof. Xin Yuan *Feb. 2024 — Jun. 2024*
- **Comprehensively conducted literature review** on snapshot compressive imaging (SCI), analyzing 50+ top-tier conference/journal papers (CVPR/ICCV/TPAMI) to deliver a visiting report as a technical summary.
- **Independently investigated efficient architectures** (linear attention, state space models), adapting these frameworks into low-level vision pipelines validated on SCI benchmarks, with findings presented at lab meetings.

SenseAir: AI-Driven Compressed Air System Management Platform Tongji University, Shanghai
Team Member *Mar. 2023 — Sept. 2023*
- Developed a digital twin platform integrating deep learning for air compressor maintenance; **obtained software copyright** and **filed patent application** (CN202211466896.3) based on our innovation as the first inventor.

Honors and Awards

Golden Prize, "Internet+" Innovation and Entrepreneurship Competition (Shanghai Regional) *Sept. 2023*
Third Prize, National University Student Contest on Energy Saving and Emission Reduction *Aug. 2023*
First Prize, Undergraduate Group of Asia and Pacific Mathematical Contest in Modeling *Mar. 2023*
Second Prize, Embedded System Design Invitational Contest (Intel Cup) *Aug. 2022*

Skills

- **Programming**: Python (including PyTorch, PyTorch Lightning, etc.) | C/C++ | CUDA (Beginner level)
- **Languages**: English: IELTS 7.0 Overall (Reading 8.5, Listening 7.0, Speaking 6.5, Writing 6.5) | CET-6 557