BIOGRAPHICAL SKETCH

Wenxu Zhou
Master Student
University of Science and Technology of China
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(a) Education

University of Science and Technology of China	Master	Fall 2023 – Present
Anhui University	Bachelor	Fall 2019 – Spring 2023

(b) Research & Professional Experience

Intelligent Information Processing Laboratory: Research Assistant Sept. 2023 – Present

- **Intelligent Anode Copper Plate Detection Terminal**
  Focus: Industrial Shape Analysis, Scene Reconstruction and Semantic Understanding.
  Designed and developed an industrial-grade anode copper plate measurement system leveraging image segmentation and morphological processing algorithms; engineered an intuitive user-friendly GUI for on-site operators, and achieved high-precision dimensional ranging with $\pm$2mm accuracy, which has been successfully deployed in full-cycle industrial production scenarios.
- **Endoscope Scene Modeling and Analysis**
  Implemented high-fidelity dynamic 3D geometric modeling of gastrointestinal scenes via 3D Gaussian Splatting; enabled open-vocabulary semantic understanding of endoscopic environments through a custom semantic encoding pipeline.
  Constructed a large-scale multi-modal 2D-3D gastrointestinal endoscopy dataset, and led the pre-training of a self-supervised multi-modal visual encoder with fused image and point cloud features. Designed a vision adapter-based fine-tuning framework for downstream medical image analysis tasks, with all above work forming the core content of my master's thesis.

Songying Technology: Research Intern Jul. 2025 – Oct. 2025

- **LLM-Driven 3D Scene Generation**
  Focus: 3D In-door Scene Synthesis.
  Built the IL3D dataset for large language model (LLM) driven 3D indoor scene synthesis, optimized for Qwen3 series models; developed a text-guided 3D asset retrieval system and a supervised fine-tuning (SFT) based end-to-end 3D indoor scene generation pipeline.
  Open-sourced full project deliverables, including the dataset, code, and technical report.

(c) Publications

Most closely related

1. Wenxu Zhou, Kaixuan Nie, Hang Du, Dong Yin, Wei Huang, Siqiang Guo, Xiaobo Zhang, and Pengbo Hu, Il3d: A large-scale indoor layout dataset for llm-driven 3d scene generation (2025), arXiv:2510.12095 [cs.CV] .
2. Wenxu Zhou and Dong Yin, Open-vocabulary endoscopic scene understanding via 4d language gaussian splatting, in *2025 IEEE International Conference on Bioinformatics and Biomedicine (BIBM)* (2025) pp. 7184–7191.

3. Wenxu Zhou, Taoran Sun, Tianle Hu, Jiulin Li, and Dong Yin, Endo2dgs: Endoscopic scene reconstruction with high-fidelity geometry, in *Pattern Recognition and Computer Vision*, edited by Josef Kittler, Hongkai Xiong, Jian Yang, Xilin Chen, Jiwen Lu, Weiyao Lin, Jingyi Yu, and Weishi Zheng (Springer Nature Singapore, Singapore, 2026) pp. 3–18.

Other significant publications

4. Tianle Hu, Wenxu Zhou, Zhihan Zhang, and Dong Yin, Idpt: Enhancing image detail perception with tree-based search for mllms, in *2025 6th International Conference on Machine Learning and Computer Application (ICMLCA)* (2025) pp. 903–907.
5. Taoran Sun, Wenxu Zhou, Muhammad Samsam Ul Haq, and Dong Yin, Hda-samunet: A medical image segmentation method based on vision mamba unet and medsam, in *2025 6th International Conference on Electronic Communication and Artificial Intelligence (ICECAI)* (2025) pp. 430–434.

(d) Synergistic Activities

1. Academic Services
   - Conference Reviewer: PRCV, AAAI.
2. Teaching and Mentorship
   - Teaching Assistant for Data Structure and Algorithm (210070.06), Fall 2024.
   - Undergraduate Thesis Supervisor: Guided 3 undergraduate students on graduation theses.

(e) Honors and Scholarships

- First-class Academic Scholarships for Postgraduates, by USTC, 2025.
- Second-Class Academic Scholarships for Postgraduates, by USTC, 2023, 2024.
- Second Prize in the Art Exhibition , by USTC Arts Education Center, 2023.
- Second-Class Academic Excellence Scholarship, by AHU, 2020.

(f) Technical and Professional Skills

- Programming: Linux, Python, C/C++, PyTorch, MatLab, Qt, LaTeX.
- 3D Tools: Open3d, Trimesh, PyTorch3D, Blender Software and Python API.
- Technical Expertise: Self-supervised Learning, Gaussian Splatting, SFT for LLM.
- Languages: Chinese (Native), English (Full professional proficiency).

(g) References

- Prof. Dong Yin
  Advisor for Master's Degree
  Department of Electronic Engineering and Information Science
  School of Information Science and Technonogy
  University of Science and Technology of China
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