Yang Zhou

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BIOGRAPHY

I am a third-year Ph.D. student in the Department of Computer Science at Rutgers University, supervised by Prof. Dimitris N. Metaxas in the Center for Computational Biomedicine Imaging and Modeling. Before that, I obtained my M.S. degree in Control Science and Engineering from the University of Science and Technology of China.

My current research interests include Multimodal Large Language Models (MLLMs), Large Language Models (LLMs), Multi-Agent Systems, and Test-Time Scaling.

EDUCATION

Rutgers University September 2023 – Present
Ph.D. in Computer Science
Specialization: Large Language Models, Computer Vision

University of Science and Technology of China September 2020 – June 2023
Master of Engineering, Control Science and Engineering
Specialization: Computer Vision, Object Detection, CNN Architecture

Southwest University September 2016 – June 2020
Bachelor of Engineering, Automation
Specialization: Signals & Systems

PUBLICATIONS

MLLM & LLM

- **Evaluating LLMs When They Do Not Know the Answer: Statistical Evaluation of Mathematical Reasoning via Comparative Signals**
  Zihan Dong, Zhixian Zhang, **Yang Zhou**, Can Jin, Ruijia Wu, Linjun Zhang.
  arXiv, 2026. ICML 2026 Submit.

- **LED: LLM Enhanced Open-Vocabulary Object Detection without Human Curated Data Generation**
  Yang Zhou, Shiyu Zhao, Yuxiao Chen, Zhengting Wang, Can Jin, Dimitris N. Metaxas.
  arXiv, 2025.

Multi-Agent

- **M3-Bench: Multi-Modal, Multi-Hop, Multi-Threaded Tool-Using MLLM Agent Benchmark**
  Yang Zhou, Mingyu Zhao, Zhenting Wang, Difei Gu, Bangwei Guo, Ruosong Ye, Ligong Han, Can Jin, Dimitris N. Metaxas.
  arXiv, 2025.

- **CAMEL: A Framework for Finding the Scaling Laws of Agents**
  Ziyi Yang, ... **Yang Zhou**, ...
  ICML 2026 Submit.

RL

- **AIRL-S: Unifying Reinforcement Learning and Search-Based Test-Time Scaling via Adversarial Inverse Reinforcement Learning**
  Can Jin, **Yang Zhou**, Qixin Zhang, Hongwu Peng, Di Zhang, Zihan Dong, Marco Pavone, Ligong Han, Zhang-Wei Hong, Tong Che, Dimitris N. Metaxas.
  ICML 2026 Submit.

- **Your Reward Function for RL is Your Best PRM for Search: Unifying RL and Search-Based TTS**
  Can Jin, **Yang Zhou**, Qixin Zhang, Hongwu Peng, Di Zhang, Marco Pavone, Ligong Han, Zhang-Wei Hong, Tong Che, Dimitris N. Metaxas.
  arXiv, 2025.

Computer Vision & Medical Imaging

- **RadAlign: Advancing Radiology Report Generation with Vision-Language Concept Alignment**
  Difei Gu, Yuxuan Gao, **Yang Zhou**, Mengmi Zhou, Dimitris Metaxas.
  MICCAI 2025.
- **A Multimodal Spatio-Temporal GCN Model with Enhancements for Isolated Sign Recognition**
  Yang Zhou, Zhaoyang Xia, Yuxiao Chen, Carol Neidle, Dimitris N. Metaxas.
  LREC-COLING 2024.
- **A Review of Convolutional Neural Network Architectures and Their Optimizations**
  Shuang Cong, **Yang Zhou**.
  Artificial Intelligence Review (IF 9.588/Q1).
- **Diffusion Models for Sign Language Video Anonymization**
  Zhaoyang Xia, **Yang Zhou**, Ligong Han, Carol Neidle, Dimitris N. Metaxas.
  LREC-COLING 2024.
- **LUCID-SAE: Learning Unified Vision-Language Sparse Codes for Interpretable Concept Discovery**
  Difei Gu, Yunhe Gao, Gerasimos Chatzoudis, Zihan Dong, Guoning Zhang, Bangwei Guo, **Yang Zhou**, Mu Zhou, Dimitris N. Metaxas.
  arXiv, 2026. ICML 2026 Submit.
- **K-Prism: A Knowledge-Guided and Prompt Integrated Universal Medical Image Segmentation Model**
  Bangwei Guo, Yuxuan Gao, Mengqi Ye, Difei Gu, **Yang Zhou**, Leon Axel, Dimitris Metaxas.
  arXiv, 2025.

Previous Work (Modeling, Data Analysis, Signals & Systems)

- **A Multistory Building Evacuation Model Based on Multiple-Factor Analysis**
  Yang Zhou, Zichuan Fan.
  Advances in Civil Engineering (IF 1.924/Q3).
- **The Excitation and Detection of Lamb Waves in a Droplet-Loaded Plate Using Air-Coupled Ultrasonic Transducers**
  Zichuan Fan, **Yang Zhou**, Tanghong Wu.
  Measurement (IF 5.131/Q1).
- **Quasi-Dispersion of Air-Coupled Ultrasonic Signal for Angle-Dependent Reception**
  Zichuan Fan, **Yang Zhou**, Tianhao Qie.
  Measurement (IF 5.131/Q1).
- **Multiphysics Model of Lamb Waves Propagation in a Plate Loaded with Droplets**
  Yang Zhou, Zichuan Fan.
  ICCAR 2019, IEEE.
- **Multiple Reflective Signal Reception in Gas Flow Measurement Using Air-Coupled Leaky Lamb Waves**
  Zichuan Fan, Tianhao Qie, **Yang Zhou**.
  Measurement (IF 5.131/Q1).

TEACHING & TALKS

Computer Security (Teaching Assistant) Spring 2025
Rutgers University, New Jersey, USA

Systems Programming (Teaching Assistant) Fall 2023, Spring 2024
Rutgers University, New Jersey, USA

Neural Networks and Deep Learning (Teaching Assistant) Aug 2021
University of Science and Technology of China, Hefei, China

Characteristics of Lamb Waves and Their Leakage Waves (Presenter) May 2019
ICCAR International Academic Conference, Beijing, China

SKILLS

- **Operating Systems:** Windows, Linux
- **Programming:** Python (primary), C++, Java
- **Tools:** Office Suite, MATLAB

HONORS & PATENTS

- 2019 Invention Patents (China)
- 2019 Utility Model Patent (China)
- 2019 Mathematical Contest in Modeling (COMAP) – Meritorious Winner