YUNFEI XIE

RESEARCH INTERESTS
LLM Post-trinity, LLM-agents, Vision-Language Models

EDUCATION
Rice University | Houston, TX
Ph.D. in Computer Science | September 2025 – Present Advisor: Prof. Chen Wei
Awards: Lambda Research Grant ($10,000)
Huazhong University of Science and Technology | Wuhan, China
Bachelor of Engineering in Artificial Intelligence | September 2021 – June 2025
Awards: Science and Technology Scholarship (Top 2% in school)

PUBLICATIONS
First Author Publications:
1. **Yunfei Xie**, Yinsong Ma, Shiyi Lan, Alan Yuille, Junfei Xiao, Chen Wei. "Play to Generalize: Learning to Reason Through Game Play." *Under review*, 2025. [link]
2. **Yunfei Xie**, Ce Zhou, Lang Gao, Juncheng Wu, Xianhang Li, Hong-Yu Zhou, Sheng Liu, Lei Xing, James Zou, Cihang Xie, Yuyin Zhou. "MedTrinity-25M: A Large-scale Multimodal Dataset with Multigranular Annotations for Medicine." *ICLR 2025*. (350+ GitHub stars) [link]
3. **Yunfei Xie**, Kevin Wang, Bobby Cheng, Jianzhu Yao, Zhizhou Sha, Alexander Duffy, Yihan Xi, Chen Wei, Pramod Viswanath, Zhangyang Wang. "COPER: Agentic Context Significantly Improves and Stabilizes LLM in Multi-Player Game." *Under review*, 2025. [link]
4. **Yunfei Xie**, Cihang Xie, Alan Yuille, Jieru Mei. "From Pixels to Objects: A Hierarchical Approach for Part and Object Segmentation Using Local and Global Aggregation." *ECCV 2024*. [link]
5. **Yunfei Xie**, Ce Zhou, Jieru Mei, Xianhang Li, Cihang Xie, Yuyin Zhou. "Brain Tumor Segmentation Through Supervoxel Transformer." *IEEE ISBI 2024*. [link]
6. **Yunfei Xie**, Juncheng Wu, Haoqin Tu, Siwei Yang, Bingchen Zhao, Yongshuo Zong, Qiao Jin, Cihang Xie, Yuyin Zhou. "A Preliminary Study of o1 in Medicine: Are We Closer to an AI Doctor?" *Under review*, 2025. [link]
7. **Yunfei Xie**, Alan Yuille, Cihang Xie, Yuyin Zhou, Jieru Mei. "Few-Shot Medical Image Segmentation via Supervoxel Transformer." *Under review*, 2025. [link]
8. **Yunfei Xie**, Yuxuan Cheng, Juncheng Wu, Haoyu Zhang, Yuyin Zhou, Shoudong Han. "SCING: Towards More Efficient and Robust Person Re-Identification through Selective Cross-modal Prompt Tuning." *Under review*, 2025. [link]

Co-author Publications:
9. Jiawei Mao, Xiaoke Huang, **Yunfei Xie**, Yuanqi Chang, Mude Hui, Yuyin Zhou. "Story-Adapter: A Training-free Iterative Framework for Long Story Visualization." *Under review*, 2025. (900+ GitHub stars) [link]

RESEARCH EXPERIENCE
Rice University | Houston, TX
Research Assistant | February 2025 – Present
Advisor: Prof. Chen Wei
- Proposed Visual Game Learning post-training paradigm enabling MLLMs achieving out-of-domain generalization through game-based reinforcement learning.
- Proposed a self-evolving agent framework that continuously optimizes context and memory via retrieval, updating, and deletion.

VLAA Lab, University of California, Santa Cruz | Santa Cruz, CA
Research Assistant | February 2024 – February 2025
Advisor: Prof. Yuyin Zhou and Prof. Cihang Xie
- Developed an automated data synthesis pipeline incorporating RAG for vision-language model pretraining, scaling medical pretraining datasets to 25 million samples.
- Proposed a training-free framework for consistent long story generation.
- Constructed a comprehensive medical benchmark for holistic evaluation of OpenAI o1's medical capabilities.

CCVL Lab, Johns Hopkins University | Baltimore, MD
Research Assistant | August 2023 – February 2024
Advisor: Prof. Alan Yuille
- Integrated differentiable superpixels into vision transformers to enhance fine-grained segmentation.
- Integrated differentiable supervoxels into 3D vision transformers for medical segmentation.

SKILLS
Programming Languages: Python, Shell, LaTeX, HTML
ML Frameworks: PyTorch, TensorFlow, JAX, Hugging Face Transformers, OpenRLHF
Tools & Infrastructure: Git, Docker, Slurm, Linux, Vim, Weights & Biases
Research Fields: Reinforcement Learning, LLM Pre-training, LLM Post-training, Computer Vision

ACADEMIC SERVICE
Reviewer:
- 2026: CVPR, ICLR
- 2025: ICCV, ICLR, CVPR, ICML, NeurIPS, TMM, TPAMI
- 2024: CVPR, ICML, IEEE ISBI