

# YUNFEI XIE

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## RESEARCH INTERESTS

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LLM post-training, Self-evolving Agent

## EDUCATION

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### Rice University

09/2025-

Ph.D. in Computer Science, Supervisor: Prof. Chen Wei

### Huazhong University of Science and Technology

09/2021-06/2025

Bachelor of Engineering in Artificial Intelligence

## PUBLICATION LIST (GOOGLE SCHOLAR)

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1. Under review [link]: **Yunfei Xie**, Yinsong Ma, Shiyi Lan, Alan Yuille, Junfei Xiao, Chen Wei. “Play to Generalize: Learning to Reason Through Game Play”
2. ICLR 2025 [link]: **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” (received 350+ stars on GitHub)
3. Under review [link]: **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”
4. ECCV 2024 [link]: **Yunfei Xie**, Cihang Xie, Alan Yuille, and Jieru Mei. “From Pixels to Objects: A Hierarchical Approach for Part and Object Segmentation Using Local and Global Aggregation”
5. IEEE ISBI 2024 [link]: **Yunfei Xie**, Ce Zhou, Jieru Mei, Xianhang Li, Cihang Xie, and Yuyin Zhou. “Brain Tumor Segmentation Through Supervoxel Transformer”
6. Under review [link]: **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?”
7. Under review [link]: **Yunfei Xie**, Alan Yuille, Cihang Xie, Yuyin Zhou, Jieru Mei. “Few-Shot Medical Image Segmentation via Supervoxel Transformer”
8. Under review [link]: Jiawei Mao, Xiaoke Huang, **Yunfei Xie**, Yuanqi Chang, Mude Hui, Yuyin Zhou. “Story-Adapter: A Training-free Iterative Framework for Long Story Visualization” (received 900+ stars on GitHub)
9. Under review [link]: **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”

## HONORS AND AWARDS

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1. Science and Technology Scholarship, Huazhong University of Science and Technology (top 2% in school)
2. Lambda Research Grant Sponsorship, \$10,000

## RESEARCH EXPERIENCE

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### Rice University, *Research Assistant*

02/2025-06/2025

Advised by Prof. Chen Wei

- Proposed a post-training paradigm, Visual Game Learning, enabling MLLMs to achieve out-of-domain generalization capabilities for multimodal reasoning via game-based reinforcement learning
- Proposed a self-evolving agent framework that continuously optimizes context and memory via retrieval, updating, and deletion

### VLAA lab at University of California, Santa Cruz, *Research Assistant*

02/2024-02/2025

Advised by 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

Advised by Prof. Alan Yuille

- Integrated differentiable superpixels into vision transformers to enhance fine-grained segmentation
- Integrated differentiable supervoxels into 3D vision transformers for medical segmentation

## ACADEMIC SERVICE

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Reviewer:

2026: CVPR, ICLR

2025: ICCV, ICLR, CVPR, ICML, TMM, NeurIPS, TPAMI

2024: CVPR, ICML, IEEE ISBI

## PROFESSIONAL SKILLS

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Programming Languages: Python, Shell,  $\text{\LaTeX}$ , HTML

Programming Tools: Git, PyTorch, Docker, Slurm, Linux Ops, Vim