

Xinrui Wu

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Education

University of Electronic Science and Technology of China (UESTC)

Sep 2023 – Present

B.S. in Software Engineering (Embedded System)

Chengdu, China

GPA: 3.65/4.0 Average score: 85.01/100

Expected graduation: 2027

Publications

BudgetThinker: Empowering Budget-aware LLM Reasoning with Control Tokens [🔗](#)

Hao Wen*, Xinrui Wu*, Yi Sun, Feifei Zhang, Liye Chen, Jie Wang, Yifan Su, Yunxin Liu, Ya-Qin Zhang, Yuanchun Li

Accepted by EMNLP 2026

MaskGuide: Efficient Distillation for Deployable Lightweight Segmentation in Marine Environments [🔗](#)

Xinrui Wu*, Ziqiang Zheng*, Yiwei Chen, Zeyu Ma⁺, Yang Yang, Sai-Kit Yeung

Accepted by IEEE RA-L 2026

Can Image Models Imagine Time? ImageTime: A Novel Benchmark for Probing Visual World Modeling Through Spatiotemporal Consistency [🔗](#)

Xinrui Wu*, Lichen Huang*

Accepted by WACV 2027

Hierarchical Relational Trajectory Modeling for Longitudinal Clinical Prognosis

Xinrui Wu, Wanqi Yang, Min Xu, Yutong Xie

Submitted to ICLR 2027

BiDeMem: Bidirectional Degradation Memory for Explainable Image Restoration [🔗](#)

Xinrui Wu*, Lichen Huang*

Preprint, 2026

Research Experience

MBZUAI | Dean: Prof. Eric Xing

Jan 2026 – Present

Visiting Student, Advisor: Prof. Yutong Xie

 MBZUAI, Abu Dhabi, UAE

- Developed a framework integrating multi-stage patient information for structured clinical reasoning and longitudinal prognosis.
- Explored training paradigms for clinical world models.

Tsinghua University, AIR | Dean: Prof. Ya-Qin Zhang

Jan 2025 – Present

Research Intern, Advisors: Prof. Yuanchun Li, Prof. Yunxin Liu

 THU, Beijing, China

- Developed BudgetThinker for budget-aware LLM reasoning using a proportional control token mechanism.
- Combined specialized data and reinforcement learning in a two-stage training pipeline, achieving SOTA performance on benchmarks such as MATH and over 95% budget adherence.
- Demonstrated generalization to embodied spatial reasoning.

HKUST, VGD Group

Jul 2025 – Aug 2025

Research Intern, Advisor: Prof. Sai-Kit Yeung

 HKUST, Hong Kong, China

- Studied lightweight image segmentation and salient individual identification in marine environments.
- Proposed MaskGuide, a mask-guided distillation framework that separates and purifies features to enhance critical information and suppress noise.
- The resulting Tiny-MSAM achieves 99.4% of SAM's accuracy with 0.5% of its parameters and an inference speed of 164.7 FPS.

UESTC, CFM (Center for Future Media)

Jun 2024 – Present

Research Intern, Advisor: Prof. Yang Yang

 UESTC, Chengdu, China

- Studied open-vocabulary object detection (OVD) and segmentation (OVS), with a focus on methods to reduce false positives.
- Developed and evaluated detection and segmentation methods for objects with diverse visual appearances across datasets.

Honors & Awards

UESTC Model Student Scholarship — Top 5%: Science & Technology Innovation

2024, 2025

National Third Prize — China College Student Computer Design Competition

Jun 2025

National Third Prize — National College Student Innovation and Entrepreneurship Competition

May 2025

National Second Prize — C4 National College Student Network Technology Challenge

Aug 2024

National Third Prize — C4 National College Student Network Technology Challenge

Aug 2024

Second Prize, Sichuan Province — China College Student Computer Design Competition

Jun 2024

Research Interests

World Models: Visual world modeling, spatiotemporal consistency, causal reasoning

Efficient Reasoning & Perception: Budget-aware LLM reasoning, lightweight segmentation, distillation

Spatial Intelligence: 3D perception, vision-language spatial reasoning, AR/VR

Generative Models: Controllable image generation, reference-guided editing, generative model evaluation

Clinical AI: Clinical reasoning, longitudinal prognosis, relational trajectory modeling