### **ENXIN SONG**

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## **Research Overview**

My research centers on video understanding and generative models, with key areas of focus including:

- **Efficient Long-Sequence Modeling**, especially for long video inputs, using techniques like hybrid memory, token compression, RNNs, sparse attention, and linear attention mechanism.
- **Applications of Generative Models**, with an emphasis on techniques like masked image modeling for text-to-image synthesis, and a strong focus on enhancing efficiency in data usage and training.
- **Benchmarking and Evaluation**, creating complex and meaningful real-world challenges in video domains to probe the boundaries of model capabilities, while providing insights for future enhancement.

### **Education**

M.S. Zhejiang University

CS Advisor: Gaoang Wang

2023-2026 Rank: 1/87

Visiting University of California San Diego

Spring/Summer 2025 Advisor: Zhuowen Tu

**B.S.** Dalian University of Technology

2019-2023 Software Engineering

Rank: 4.1 / 4.5

# **Employment**

**Research Intern** Microsoft Research Asia

2023-2024 Working on Video Understanding Mentor: Xun Guo

### **Awards and Honors**

Lambda AI Cloud Credits Grant Sponsorship	2025
Graduate National Scholarship at Zhejiang University (2.4%)	2025
Graduate National Scholarship at Zhejiang University (2.4%)	2024
Undergraduate National Scholarship at Dalian University of Technology (2.3%)	2021

### **Selected Publications**

The \* sign denotes equal contribution.

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### **Peer-Reviewed Papers**

- J1 Enxin Song\*, Wenhao Chai\*, Tian Ye, Jenq-Neng Hwang, Xi Li, and Gaoang Wang. MovieChat+:

  Question-aware Sparse Memory for Long Video Question Answering. In *IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)*. 2025.
- C4 Weili Xu\*, Enxin Song\*, Wenhao Chai\*, Tian Ye, and Gaoang Wang. Bringing RNNs Back to Efficient Open-Ended Video Understanding. In International Conference on Computer Vision, (ICCV). 2025.
- C3 Wenhao Chai\*, Enxin Song\*, Yilun Du, Chenlin Meng, Vashisht Madhavan, Omer Bar-Tal, Jenq-Neng Hwang, Saining Xie, and Christopher D. Manning. AuroraCap: Efficient, Performant Video Detailed Captioning and a New Benchmark. In International Conference on Learning Representations (ICLR). 2025.
- C2 Jinbin Bai, Tian Ye, Wei Chow, Enxin Song, Qing-Guo Chen, Xiangtai Li, Zhen Dong, Lei Zhu, Shuicheng Yan. Meissonic: Revitalizing Masked Generative Transformers for Efficient High-Resolution Text-to-Image Synthesis. In *International Conference on Learning Representations (ICLR)*. 2025.
- C1 Enxin Song\*, Wenhao Chai\*, Guanhong Wang, Yucheng Zhang, Haoyang Zhou, Feiyang Wu, Haozhe Chi, Xun Guo, Tian Ye, Yanting Zhang, Yan Lu, Jenq-Neng Hwang, and Gaoang Wang. MovieChat: From Dense Token to Sparse Memory for Long Video Understanding. In Computer Vision and Pattern Recognition (CVPR). 2024.

# **Workshop and Technical Reports**

- W3 Enxin Song, Wenhao Chai, Weili Xu, Jianwen Xie, Yuxuan Liu, and Gaoang Wang. Video-MMLU: A Massive Multi-Discipline Lecture Understanding Benchmark. In *International Conference on Computer Vision (ICCV) Findings*. 2025.
- W2 Weili Xu\*, Enxin Song\*, Wenhao Chai\*, Tian Ye, and Gaoang Wang. Bringing RNNs Back to Efficient Open-Ended Video Understanding. In Computer Vision and Pattern Recognition (CVPR) Workshop @ Efficient Large Vision Models. 2025.
- W1 Yichen Xu, Zihan Xu, Wenhao Chai, Zhonghan Zhao, Enxin Song, and Gaoang Wang. Devil in the Number: Towards Robust Multi-modality Data Filter. In *International Conference on Computer Vision (ICCV) Workshop* @ DataComp. 2023.

# **Preprints**

P1 Enxin Song\*, Wenhao Chai\*, Shusheng Yang, Ethan J. Armand, Xiaojun Shan, Haiyang Xu, and Zhuowen Tu. VideoNSA: Native Sparse Attention Scales Video Understanding. In *Arxiv*. 2025.

### **Talk**

From Seeing to Thinking
Lambda AI

Virtual
Sept 2025

# **Teaching**

ECE 445 Senior Design (Undergraduate)

Teaching Assistant, Zhejiang University - University of Illinois Urbana-Champaign

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# **Professional Service**

# **Workshop Organization**

Multimodal Video Agent	Nashville, TN
Workshop on Computer Vision and Pattern Recognition (CVPR) 2025	June 2025
Long-form Video Understanding Towards Multimodal AI Assistant and Copilot Workshop on Computer Vision and Pattern Recognition (CVPR) 2024	Seattle, WA June 2024

# Conference and Journal Refereeing

IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)	2025
Neural Information Processing Systems (NeurIPS)	2025
International Conference in Learning Representations (ICLR)	2025, 2026
Computer Vision and Pattern Recognition (CVPR)	2025
Pattern Recognition and Computer Vision (PRCV)	2023, 2025
IEEE Transactions on Multimedia (TMM)	2024

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