YUXUAN WANG

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EDUCATION

Nanyang Technological University (NTU), Computer Science and Engineering,
Ph.D. Candidate 2022.8 - Present

Supervised by Prof. *Hanwang Zhang* in Computer Vision.

National University of Singapore (NUS), Electrical and Computer Engineering,
Master of Science (*GPA: 4.47/5*) 2021.8 - 2022.6

Supervised by Prof. *Mike Zheng Shou* in Computer Vision.

Beihang University, Electronic Information Engineering,
Bachelor of Engineering (*GPA: 87.5/100*) 2016.9 - 2020.6

Honors: The Second-Class Prize on China Undergraduate Physics Tournament, Beijing Division; The First-class Scholarship on Academic Competition of Beihang; The First-class Scholarship of Literature and Art Award.

PUBLICATIONS

Nautilus: Locality-aware Autoencoder for Scalable Mesh Generation
Yuxuan Wang*, Xuanyu Yi*, Haohan Weng*, Xiaokang Wei, Xianghui Yang, Chunchao Guo, Long Chen, Hanwang Zhang
submitted to ACM SIGGRAPH, 2025

- We propose Nautilus, a locality-aware autoencoder for artist-like mesh generation, which leverages the local properties of manifold meshes to achieve structural fidelity and efficient representation.

Pushing Rendering Boundaries: Hard Gaussian Splatting
Qingshan Xu, Jiequan Cui, Xuanyu Yi, Yuxuan Wang, Yuan Zhou, Yew-Soon Ong, Hanwang Zhang
submitted to Conference on Computer Vision and Pattern Recognition (CVPR), 2025

- We propose Hard Gaussian Splatting, dubbed HGS, which considers multi-view significant positional gradients and rendering errors to grow hard Gaussians that fill the gaps of classical Gaussian Splatting on 3D scenes, thus achieving superior NVS results.

View-Consistent 3D Editing with Gaussian Splatting
Yuxuan Wang, Xuanyu Yi, Zike Wu, Na Zhao, Long Chen, Hanwang Zhang
European Conference on Computer Vision (ECCV), 2024

- In the diffusion model, we proposed effective multi-view consistency designs that harmonize the inconsistent multi-view image guidance by integrating with 3D Gaussian Splatting (3DGS) characteristics, offering high-quality 3DGS editing.

Predicate Debiasing in Vision-Language Models Integration for Scene Graph Generation
Yuxuan Wang, Xiaoyuan Liu
Main Conference, Empirical Methods in Natural Language Processing (EMNLP), 2024

- We introduced a plug-and-play debiasing method for the zero-shot VLMs, dynamically ensembling them to address the underrepresentation issue in Scene Graph Generation (SGG) models.

Symbolic Replay: Scene Graph as Prompt for Continual Learning on VQA Task
Stan Weixian Lei, Difei Gao, Jay Zhangjie Wu, Yuxuan Wang, Wei Liu, Mengmi Zhang, Mike Zheng Shou
AAAI Conference on Artifical Intelligence (AAAI), 2023, **Oral**

- We introduced Scene Graph as Prompt (SGP) for symbolic replay, a real-data-free replay-based method for Continual Learning VQA, which overcomes the limitations of replay-based methods by leveraging the scene graph as an alternative to images for replay.

GEB+: A Benchmark for Generic Event Boundary Captioning, Grounding and Retrieval
Yuxuan Wang, Difei Gao, Licheng Yu, Stan Weixian Lei, Matt Feiszli, Mike Zheng Shou
European Conference on Computer Vision (ECCV), 2022

- We introduced three tasks of video boundary understanding on our new dataset called Kinetics-GEB+ (Generic Event Boundary Plus), consisting of over 170k boundaries associated with captions in 12K videos.
- We designed a new Temporal-based Pairwise Difference (TPD) Modeling method for visual difference representation and achieved significant performance improvements.

AssistSR: Task-oriented Video Segment Retrieval for Personal AI Assistant
Stan Weixian Lei, Difei Gao, Yuxuan Wang, Dongxing Mao, Zihan Liang, Lingmin Ran, Mike Zheng Shou
Findings, Empirical Methods in Natural Language Processing (EMNLP), 2022

- We introduce a new dataset and a new task called Affordance-centric Question-driven Video Segment Retrieval (AQVSR), aiming at retrieving affordance-centric instructional video segments given users' questions.
- To address the task, we developed a straightforward model called Dual Multimodal Encoders (DME).

RESEARCH PROJECTS

Test System Building of IMS-MLD Decoding Algorithm and Reed-Muller Code
Senior Thesis supervised by Prof. *Qin Huang*, Beihang University 2020.2 - 2020.6

Analog Fountain Code (AFC)
Supervised by Prof. *Qin Huang*, Beihang University 2019.7 - 2019.9

Blind Identification and Demodulation of Modulated Signals
Supervised by Prof. *Qin Huang*, Beihang University 2018.7 - 2018.10

SKILLS

- **Language**: Mandarin (Native), English (GRE: 331/340, TOEFL: 110/120)
- **Coding**: Python, Java, C#, MATLAB, SQL
- **Music**: Piano, Guitar, Clarinet, Cavalry trumpet, Singing, Chorus Conducting

INTERNSHIP EXPERIENCE

Software Development Intern | Inspur Co., Ltd
Financial System for COMAC, Shanghai 2021.1 - 2021.5
Big Data Platform for Health and Wellbeing 2020.6 - 2020.9

OTHER EXPERIENCE

Chorus, Beihang University
Tenor Singer 2016.9 - 2020.6

- Won the gold medal at the national college music performance.
- Won the gold medal at the International Chorus Festival in Calella, Spain.
- Five performances in special concerts and musical theaters.
- Jointly performed with the Chorus of University of Johannesburg.