

# YUXUAN WANG

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## EDUCATION

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**Nanyang Technological University (NTU)**, School of 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

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### **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 modules that harmonize the inconsistent multi-view image guidance by integrating with 3D Gaussian Splatting (3DGS) characteristics,
- We incorporated our consistency modules into an iterative pattern that offers high-quality 3DGS editing.

### **Improving Scene Graph Generation with Relation Words' Debiasing in Vision-Language Models**

Yuxuan Wang, Xiaoyuan Liu

*Submitted to ACM MM*, 2024

- We introduced a plug-and-play method that dynamically ensemble the zero-shot VLMs to address the under-representation issue in Scene Graph Generation (SGG) models.
- Towards the relation words bias underlying in the pre-training language set, we propose Lagrange-Multiplier Estimation to approximate the unattainable pre-training words' distribution.

### **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.

### **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 Artificial 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.
- SGP overcomes the limitations of replay-based methods by leveraging the scene graph as an alternative to images for replay.

### **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 of 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).

## OTHER RESEARCHES

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### **Test System Building of IMS-MLD Decoding Algorithm and Reed-Muller Code**

Bachelor 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

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- **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

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### **Big Data Platform for Health and Medical | Inspur Co., Ltd**

Java Software Engineer 2020.6 - 2020.9

### **Zhiyue | Weitong Education Co., Ltd**

C# Web Software Engineer 2020.10 - 2021.1

### **COMAC Financial System | Inspur Co., Ltd**

Back-End Software Engineer 2021.1 - 2021.5

## EXTRACURRICULAR EXPERIENCE

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### **Student 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.