

YUXUAN WANG

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EDUCATION

Nanyang Technological University (NTU), School of Computer Science and Engineering,
Ph.D. Student 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

View-Consistent 3D Editing with Gaussian Splatting

Yuxuan Wang, Xuanyu Yi, Zike Wu, Na Zhao, Long Chen, Hanwang Zhang

Submitted to 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 ACL, 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.

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).

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.

OTHER RESEARCHES

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

- **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

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

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.