

Zun Wang

☎ (+1) 984-369-3714 • ✉ zunwang@cs.unc.edu • 🌐 zunwang1.github.io

🎓 [Zun's Google Scholar](#) • 🏠 [wz0919](#)

Education

University of North Carolina, Chapel Hill, Chapel Hill, North Carolina Jul 2024 – Present

Ph.D. in Computer Science

Advisor: [Prof. Mohit Bansal](#)

The Australian National University, Canberra, Australia Jul 2020 – Jul 2023

Master of Machine Learning and Computer Vision

Advisor: [Prof. Stephen Gould](#)

Graduated with [Postgraduate Medal for Academic Excellence](#) (Top 1 out of the CECC college)

University of Science and Technology of China, Hefei, China Sep 2015 – Jun 2019

Bachelor of Mathematics and Applied Mathematics

Specialization in Probability and Statistics

Research Interest

My research goal is to build multimodal, generative, and embodied agents, with current interests in

- Multimodal Understanding and Generation
- Scalable Learning for Embodied Agents
- Multimodal Data Generation and Curation

Papers

* denotes equal contribution

- DreamRunner: Fine-Grained Storytelling Video Generation with Retrieval-Augmented Motion Adaptation**
Preprint, Submitted to CVPR 2025
Zun Wang, Jialu Li, Han Lin, Jaehong Yong, Mohit Bansal
- Bootstrapping Language-Guided Navigation Learning with Self-Refining Data Flywheel**
Preprint, Submitted to ICLR 2025 (average rating: 6.5)
Zun Wang, Jialu Li, Yicong Hong, Songze Li, Kunchang Li, Shoubin Yu, Yi Wang, Yu Qiao, Yali Wang, Mohit Bansal, Limin Wang
- Scaling Data Generation in Vision-and-Language Navigation**
ICCV 2023 (Oral)
Zun Wang*, Jialu Li*, Yicong Hong*, Yi Wang, Qi Wu, Mohit Bansal, Stephen Gould, Hao Tan and Yu Qiao
- Bridging the Gap Between Learning in Discrete and Continuous Environments for Vision-and-Language Navigation**
CVPR 2022
Yicong Hong*, **Zun Wang***, Qi Wu and Stephen Gould
- Vision-and-Language Navigation Today and Tomorrow: A Survey in the Era of Foundation Models**
TMLR 2024
Yue Zhang*, Ziqiao Ma*, Jialu Li*, Yanyuan Qiao*, **Zun Wang***, Joyce Chai, Qi Wu, Mohit Bansal, Parisa Kordjamshidi
- Navgpt-2: Unleashing Navigational Reasoning Capability for Large Vision-Language Models**
ECCV 2024
Gengze Zhou, Yicong Hong, **Zun Wang**, Xin Eric Wang, Qi Wu

7. **ETPNav: Evolving Topological Planning for Vision-Language Navigation in Continuous Environments**
TPAMI 2024
Dong An, Hanqing Wang, Wenguan Wang, **Zun Wang**, Yan Huang, Keji He, Liang Wang
8. **SAME: Learning Generic Language-Guided Visual Navigation with State-Adaptive Mixture of Experts**
Preprint, Under Review
Gengze Zhou, Yicong Hong, **Zun Wang**, Chongyang Zhao, Mohit Bansal, Qi Wu
9. **MVBench: A Comprehensive Multi-modal Video Understanding Benchmark**
CVPR 2024 (*Highlight*)
Kunchang Li, Yali Wang, Yinan He, Yizhuo Li, Yi Wang, Yi Liu, **Zun Wang**, Jilan Xu, Guo Chen, Ping Luo, Limin Wang, Yu Qiao
10. **InternVideo: General Video Foundation Models via Generative and Discriminative Learning**
Preprint, Under Review
Yi Wang, ..., **Zun Wang**, ..., Yali Wang, Limin Wang, Yu Qiao
11. **InternVideo2: Scaling Video Foundation Models for Multimodal Video Understanding**
ECCV 2024
Yi Wang, ... , **Zun Wang**, ..., Yu Qiao, Yali Wang, Limin Wang

Research Experience

University of North Carolina, Chapel Hill, Chapel Hill, North Carolina **Aug 2024 - Present**
Ph.D. Student – Advised by [Prof. Mohit Bansal](#)

- Topics: Video Generation. Multimodal Learning.
- Building a powerful storytelling video generation model via LLM planning, RAG and attention/lora decomposition, could generalized to compositional text-to-video generation.
- Paper under review at CVPR 2025.

Shanghai AI Laboratory, GeneralVideo Group, Shanghai, China **Sept 2023 - Aug 2024**
Research Intern – Led by [Prof. Limin Wang](#) and [Prof. Yu Qiao](#)

- Topics: Language-guided Navigation.
- Building a strong language-guided navigation agent that **surpasses human performance** on the R2R dataset + SoTAs on eight VLN tasks with the proposed navigator-generator-data self-refining flywheel.
- paper under review at ICLR 2025.

Shanghai AI Laboratory, GeneralVideo Group, Shanghai, China **Mar 2022 – Mar 2023**
Research Intern – Led by [Dr. Yi Wang](#) and [Prof. Yu Qiao](#)

- Topics: Video Understanding, Vision-and-Language Navigation.
- Improving VLN SoTAs by a large margin via large-scale data generation (accepted as Oral at ICCV 2023).
- Enhancing navigation agents with video foundation models.
- 2022 REVERIE VLN Challenge winner among 50+ international teams.

Sensetime & Shanghai AI Laboratory, AGI Group, Shanghai, China **Dec 2021 – Mar 2022**
Research Intern – Led by [Dr. Jing Shao](#)

- Won the RxR-Habitat Competition in Embodid AI Workshop at CVPR 2022.

The Australian National University, Canberra, Australia **Mar 2021 – Dec 2021**
Research Student – Advised by [Dr. Yicong Hong](#) and [Prof. Stephen Gould](#)

- Projects on discrete-to-continuous Vision-and-Language Navigation (accepted by CVPR 2022).

Awards

Postgraduate Medal for Academic Excellence, ANU **Jul 2023**
Top 1 postgraduate student out from the College of Engineering, Computing & Cybernetics, university-wide prize, highest honor for master students

Chancellor's Letter of Commendation, ANU **Nov 2022**
Awarded to full-grade students over the past year

CSIG 2022, REVERIE Challenge channel 1 & channel 2, **1st places, 14800 USD Bonus** **Aug 2022**

Zun Wang, Yi Wang, Yinan He, Yu Qiao

CVPR 2022 Embodied AI Workshop, RxR-Habitat Competition, **1st place** **Jun 2022**

Dong An*, **Zun Wang***, Yangguang Li, Yi Wang, Yicong Hong, Yan Huang, Liang Wang, Jing Shao

Academic Activities

- Winner invited talk at Competition Forum @ CSIG2022
- Winner invited talk at Embodied AI Workshop @ CVPR2022
- Conference Reviewer: AAAI2023, CVPR2023, EMNLP2023, CVPR2024, EMNLP2024, CVPR2025

References

Mohit Bansal

John R. & Louise S. Parker Professor

University of North Carolina, Chapel Hill

mbansal@cs.unc.edu

Stephen Gould

Professor

The Australian National University

stephen.gould@anu.edu.au

Yu Qiao

Lead Scientist

Shanghai AI Laboratory

qiaoyu@pjlab.org.cn

Limin Wang

Professor

Nanjing University

lmwang.nju@gmail.com

Yi Wang

Research Scientist

Shanghai AI Laboratory

wangyi@pjlab.org.cn

Yicong Hong

Research Scientist

Adobe Research

mr.yiconghong@gmail.com