

# Zun Wang

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## 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**  
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**  
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

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

## References

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**Mohit Bansal**

John R. & Louise S. Parker Professor

University of North Carolina, Chapel Hill

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**Stephen Gould**

Professor

The Australian National University

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**Yu Qiao**

Lead Scientist

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**Limin Wang**

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**Yi Wang**

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**Yicong Hong**

Research Scientist

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