

Jialu Li

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EDUCATION	University of North Carolina, Chapel Hill, Chapel Hill, North Carolina Ph.D., Computer Science <i>Advisor: Professor Mohit Bansal</i> August 2020 - Present
	Cornell University, Ithaca, New York M.Eng., Computer Science <i>Advisor: Professor Claire Cardie</i> August 2018 - December 2020
	Shanghai JiaoTong University, Shanghai, China Major: B.S., Computer Science Minor: B.E., Finance September 2014 - June 2018
RESEARCH INTEREST	Text-to-Image Generation, Multimodal Large Language Model, Vision-and-Language Navigation
PUBLICATION	VLN-Video: Utilizing Driving Videos for Outdoor Vision-and-Language Navigation <i>AAAI, 2024</i> Jialu Li, Aishwarya Padmakumar, Gaurav Sukhatme, and Mohit Bansal
	PanoGen: Text-Conditioned Panoramic Environment Generation for Vision-and-Language Navigation <i>NeurIPS, 2023</i> Jialu Li, and Mohit Bansal
	Scaling Data Generation in Vision-and-Language Navigation <i>ICCV, 2023, (Oral Presentation)</i> Wang Zun*, Jialu Li*, Yicong Hong*, Yi Wang, Qi Wu, Mohit Bansal, Stephen Gould, Hao Tan, Yu Qiao * Equal contribution
	Improving Vision-and-Language Navigation by Generating Future-View Image Semantics <i>CVPR, 2023</i> Jialu Li, and Mohit Bansal
	EnvEdit: Environment Editing for Vision-and-Language Navigation <i>CVPR, 2022</i> Jialu Li, Hao Tan, and Mohit Bansal
	CLEAR: Improving Vision-Language Navigation with Cross-Lingual, Environment Agnostic Representations <i>Findings of NAACL, 2022</i> Jialu Li, Hao Tan, and Mohit Bansal
	NDH-Full: Learning and Evaluating Navigational Agents on Full-Length Dialogue <i>EMNLP, 2021</i> Hyoungun Kim, Jialu Li, and Mohit Bansal
	Improving Cross-Modal Alignment in Vision Language Navigation via Syntactic Information

NAACL, 2021 (short papers)
Jialu Li, Hao Tan, and Mohit Bansal

Exploring the Role of Argument Structure in Online Debate Persuasion
EMNLP, 2020 (short papers)
Jialu Li, Esin Durmus, and Claire Cardie

PREPRINT **SELMA: Learning and Merging Skill-Specific Text-to-Image Experts with Auto-Generated Data**
Preprint
Jialu Li*, Jaemin Cho*, Yi-Lin Sung, Jaehong Yoon, Mohit Bansal
* Equal contribution

Multimodal Large Language Model for Visual Navigation
Preprint
Yao-Hung Hubert Tsai, Vansh Dhar, Hugues Thomas, **Jialu Li**, Bowen Zhang, Jian Zhang

ACADEMIC RESEARCH **University of North Carolina – Chapel Hill** **August 2020 - Present**
Advisor: Professor Mohit Bansal

- Proposed to generate potentially unlimited panoramic environment for Vision-and-Language Navigation learning with text-conditioned single image outputting.
- Scaled Data for Vision-and-Language Navigation, and achieved near human navigation success rate in discrete environment.
- Enhanced the navigation agent with the ability to generate future view semantics, and utilized the generation ability to aid instruction-guided navigation.
- Learned better multi-lingual instruction representation and environment-agnostic visual representation with contrastive learning for Vision-and-Language Navigation.
- Proposed an environment-level data augmentation method for Vision-and-Language Navigation to improve agents' generalization to unseen environments.
- Proposed a new task setup that encourages instruction following in Vision-and-Dialogue navigation.
- Utilized syntax information from dependency tree to enhance alignment between the instruction and the visual scenes in Vision-and-Language Navigation tasks.

Cornell University **February 2019 - May 2020**
Advisor: Professor Claire T. Cardie

- Explored the relationship between argument structure and persuasion in online debates

INDUSTRY EXPERIENCE **Apple** **May 2023 - September 2023**
Machine Learning Research Intern
Mentor: Zhe Gan, Zirui Wang, Bowen Zhang

Amazon **May 2022 - November 2022**
Applied Scientist Intern
Mentor: Gaurav Sukhatme, Aishwarya Padmakumar

TEACHING EXPERIENCE **Natural Language Processing (CS 4740 / CS 5740)** **Cornell University**
Graduate Teaching Assistant **August 2019 - December 2019**
Instructor: Professor Claire T. Cardie

SERVICE
Reviewer for ARR, ACL, EMNLP, NAACL, EACL.
Reviewer for ACM MM, AAAI, CVPR, ICCV.

HONORS AND AWARDS Academic Excellence Scholarship (Third-Class) for 2016-2017 academic year
Academic Excellence Scholarship (Third-Class) for 2015-2016 academic year
Academic Excellence Scholarship (Second-Class) for 2014-2015 academic year

REFERENCES

Mohit Bansal John R. & Louise S. Parker Professor	University of North Carolina, Chapel Hill <i>mbansal@cs.unc.edu</i>
Zhe Gan Research Scientist	Apple <i>z_gan@apple.com</i>
Zirui Wang Research Scientist	Apple <i>ziruiw@apple.com</i>
Bowen Zhang Research Scientist	Apple <i>bowen_zhang4@apple.com</i>
Gaurav Sukhatme Amazon Scholar	Amazon <i>sukhatme@amazon.com</i>
Aishwarya Padmakumar Applied Scientist	Amazon <i>padmakua@amazon.com</i>
Claire Cardie Joseph C. Ford Professor	Cornell University <i>cardie@cs.cornell.edu</i>
Lillian Lee Charles Roy Davis Professor	Cornell University <i>llee@cs.cornell.edu</i>
Weinan Zhang Associate Professor	Shanghai JiaoTong University <i>wnzhang@sjtu.edu.cn</i>

SKILLS

Programming Languages: Python, C++
Machine Learning Frameworks: Pytorch, Ajax