

YINGSHAN CHANG

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Last updated: Feb 25, 2026



Research Keywords: Generalization, Induction, Complexity of Learning

EDUCATION

Carnegie Mellon University , Ph.D. in Language Technologies	2022 – 2026
• Advisor: Yonatan Bisk	
Carnegie Mellon University , M.S. in Language Technologies	2020 – 2022
• Advisor: Yonatan Bisk	GPA: 4.12/4.3
Hong Kong University of Science and Technology , B.S. in Computer Science and Mathematics	2016-2020
• Undergraduate Thesis Advisor: Qifeng Chen	GPA: 4.04/4.3

PUBLICATIONS

1. (under review) “*Inductive Generalization for Robotic Manipulation*”
2. (under review) “*Position: Anthropomorphizing AI Isn’t Pathological — It Demands Care*”
3. (under review) “*Formalizing the Binding Problem*”
4. Lianghuan Huang and **Yingshan Chang**. “*Causality \$\neq\$ Decodability, and Vice Versa: Lessons from Interpreting Counting ViTs*” NeurIPS 2025 Workshop on Symmetry and Geometry in Neural Representations.
5. **Yingshan Chang**, and Yonatan Bisk. “*Learning Model Successors*” arXiv preprint arXiv:2502.00197 (2025).
6. **Yingshan Chang** and Yonatan Bisk. “*Language Models Need Inductive Biases to Count Inductively*” ICLR 2025.
7. Jimin Sun, So Yeon Min, **Yingshan Chang**, and Yonatan Bisk. “*Tools Fail: Detecting Silent Errors in Faulty Tools*” EMNLP 2024.
8. Shaurya Dewan, Rushikesh Zawar, Prakanshul Saxena, **Yingshan Chang**, Andrew Luo, Yonatan Bisk. “*DiffusionPID: Interpreting Diffusion via Partial Information Decomposition*” Neurips 2024.
9. **Yingshan Chang**, Yasi Zhang, Zhiyuan Fang, Yingnian Wu, Yonatan Bisk, and Feng Gao. “*Skews in the Phenomenon Space Hinder Generalization in Text-to-Image Generation*” European Conference on Computer Vision, ECCV 2024.
10. Syeda Nahida Akter, Sangwu Lee, **Yingshan Chang**, Yonatan Bisk, and Eric Nyberg. “*VISREAS: Complex Visual Reasoning with Unanswerable Questions*” In Findings of the Association for Computational Linguistics: ACL 2024.
11. Liangke Gui*, **Yingshan Chang***, Qiuyuan Huang, Subhajit Som, Alexander G Hauptmann, Jianfeng Gao and Yonatan Bisk. “*Training Vision-Language Transformers from Captions*” In Transactions on Machine Learning Research, pp. 2835-8856. 2023.
12. **Yingshan Chang**, Mridu Narang, Hisami Suzuki, Guihong Cao, Jianfeng Gao, and Yonatan Bisk. “*Webqa: Multihop and multimodal QA*” In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition, pp. 16495-16504. 2022. **Oral**.
13. **Yingshan Chang**, and Yonatan Bisk. “*WebQA: A Multimodal Multihop NeurIPS Challenge*” In NeurIPS 2021 Competitions and Demonstrations Track, pp. 232-245. PMLR, 2022.

PROFESSIONAL SERVICE

Conference Reviewer

ICML 26, 25, 24, 23
ICLR 25, 24
NeurIPS 25, 24, 23, 22
CVPR 24, 23
TMLR 23, 22
EMNLP 23, 22
ACL 23

INDUSTRY EXPERIENCE

Amazon , Research Intern	Summer 2024
• Manager: Qiaozhi Gao	
Amazon AlexaAI , Research Intern	Summer 2023
• Manager: Govind Thattai	
• Mentor: Feng Gao	
Microsoft Research , Research Intern	Summer 2022
• Manager: Jianfeng Gao	
Bank of China Software Center , Software Engineering Intern	Summer 2018

DEPARTMENTAL SERVICE

Teaching Assistant: 11777 Multimodal Machine Learning , Carnegie Mellon University	Spring 2024 & Spring 2023
MLT/PhD Admissions Committee Student Volunteer , Carnegie Mellon University	2022 – 2023
Graduate Application Support Program Mentor , Carnegie Mellon University	2021 – 2022
Student Ambassador , Hong Kong University of Science and Technology	2017 – 2020
Student Lab Helper , Hong Kong University of Science and Technology	Fall 2018

AWARDS

Carnegie Mellon University Research Fellowship , Carnegie Mellon University	2020 – 2022
Academic Achievement Medal , Hong Kong University of Science and Technology	2020
Bachelor Degree First Class Honor , Hong Kong University of Science and Technology	2020
Dean's List , Hong Kong University of Science and Technology	2016 – 2020
University's Scholarship Scheme for Continuing Undergraduate Students	2016 – 2019
The Cheng Foundation Scholarships for Chinese Mainland Undergraduate Students	2018 – 2019
The Hong Kong Electric Co.Ltd. Scholarship	2017 – 2018
Mingxi Youth Award Scheme	2017 – 2018

SKILLS

Tools and Programming	Python, PyTorch, Git, L ^A T _E X, MarkDown, Numpy, HTML/CSS, JavaScript, Java, Matlab, R, d3
Communication	Mandarin (native), English (proficient), French (beginner)