

# YINGSHAN CHANG

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**Research Keywords:** Generalization, Induction, Complexity of Learning

## EDUCATION

<b>Carnegie Mellon University</b> , Ph.D. in Language Technologies	2022 — 2026
• Advisor: Yonatan Bisk	
<b>Carnegie Mellon University</b> , M.S. in Language Technologies	2020 — 2022
• Advisor: Yonatan Bisk	GPA: 4.12/4.3
<b>Hong Kong University of Science and Technology</b> , 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, Subhojit 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

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### 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

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

## DEPARTMENTAL SERVICE

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

## AWARDS

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

## SKILLS

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<b>Tools and Programming</b>	Python, PyTorch, Git, $\text{\LaTeX}$ , Markdown, Numpy, HTML/CSS, JavaScript, Java, Matlab, R, d3
<b>Communication</b>	Mandarin (native), English (proficient), French (beginner)