Haoliang Wang

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Academic Positions

2024- *Postdoctoral Associate*, Brain and Cognitive Sciences, MIT

Education

2019-2024 *PhD*, Experimental Psychology, UC San Diego

2015-2019 *BS*, Automation, Xi'an Jiaotong University

Selected Academic Honors and Awards

2023 Norman Anderson Graduate Travel and Research Award ($1,255).

2022 Norman Anderson Graduate Travel and Research Award ($1,500).

2018 UCLA–CSST scholarship (100 undergraduate students across China).
PengKang Scholarship (top 1% students for academic excellence).

2017 Samsung Scholarship (top 2% students for academic excellence).
The First Prize of Alumni Scholarship of Xi'an Jiaotong University (top 2% student for academic excellence).

2016 Outstanding Students in Xi'an Jiaotong University (top 5% students for academic excellence).
The First Prize of Contemporary Undergraduate Mathematical Contest in Modeling (CUMCM).

Publications

* indicates equal contribution

2024 **Wang, H.**, Jedoui, K., Venkatesh, R., Binder, F., Tenenbaum, J., Yamins, D., Fan, J., and Smith, K.. Probabilistic simulation supports generalizable intuitive physics. *Proceedings of the 46th Annual Meeting of the Cognitive Science Society.*

2023 **Wang, H.**, Jedoui, K., Venkatesh, R., Binder, F., Tenenbaum, J., Yamins, D., Fan, J., and Smith, K.. Modeling and evaluating how the brain makes physical predictions. *Society for Neuroscience 2023.*

2023 Martinez, J., Binder, F., **Wang, H.**, Haber, N., Fan, J., and Yamins, D.. Measuring and Modeling Physical Intrinsic Motivation. *Proceedings of the 45th Annual Meeting of the Cognitive Science Society.*

2022

Wang, H., Allen, K., Vul, E., and Fan, J.. Generalizing physical prediction by composing forces and objects. *Proceedings of the 44th Annual Meeting of the Cognitive Science Society.*

2022 **Wang, H.**, Yang, J., Tamari, R., and Fan, J.. Communicating understanding of physical dynamics in natural language. *Proceedings of the 44th Annual Meeting of the Cognitive Science Society.*

2022 Brockbank*, E., **Wang*, H.**, Yang, J., Mirchandani, S., Bıyık, E., Sadigh, D., and Fan, J.. How do people incorporate advice from artificial agents when making physical judgments? *Proceedings of the 44th Annual Meeting of the Cognitive Science Society.*

2021 **Wang, H.**, Polikarpova, N., and Fan, J.. Learning part-based abstractions for visual object concepts. *Proceedings of the 43rd Annual Meeting of the Cognitive Science Society.*

2021 **Wang, H.**, Vul, E., Polikarpova, N., and Fan, J.. Theory acquisition as constraint-based program synthesis. *Proceedings of the 43rd Annual Meeting of the Cognitive Science Society.*

2021 McCarthy*, W., Hawkins*, R., **Wang, H.**, Holdaway, C., and Fan, J.. Learning to communicate about shared procedural abstractions. *Proceedings of the 43rd Annual Meeting of the Cognitive Science Society.*

2020 **Wang, H.**, and Fan, J.. Library learning for structured object concepts. *ICML Workshop on Object-Oriented Learning: Perception, Representation, and Reasoning.*

Conference Presentations

2024 Probabilistic simulation supports generalizable intuitive physics: Poster presented at *46th Annual Meeting of the Cognitive Science Society.*

2023 Modeling and evaluating how the brain makes physical predictions: Poster presented at *Society for Neuroscience 2023.*

2022 Generalizing physical prediction by composing forces and objects: Poster presented at *44th Annual Meeting of the Cognitive Science Society.*

2022 Communicating understanding of physical dynamics in natural language: Poster presented at *44th Annual Meeting of the Cognitive Science Society.*

2021 Learning part-based abstractions for visual object concepts: Poster presented at *43rd Annual Meeting of the Cognitive Science Society.*

2021 Theory acquisition as constraint-based program synthesis: Poster presented at *43rd Annual Meeting of the Cognitive Science Society.*

2020 Library learning for structured object concepts: Poster presented at *ICML Workshop on Object-Oriented Learning: Perception, Representation, and Reasoning.*

Teaching Experience

UC San Diego, Department of Psychology

2024 PSYCH 105 Cognitive Psychology

PSYCH 105 Cognitive Psychology

2023 PSYCH 106 Behavioral Neuroscience

PSYCH 105 Cognitive Psychology

2022 PSYCH 102 Sensory Neuroscience

2021 PSYCH 105 Cognitive Psychology

PSYCH 104 Social Psychology

2020 PSYCH 3 Foundations of Cognitive Psychology

2019 PSYCH 100 Clinical Psychology

Responsibilities: Guest lecture a class session, assist with exam preparation and teaching, grade written assignments, and hold weekly office hours.

Outreach

2021 Gave a talk on Bayesian reasoning and program synthesis to high school students in Pathways2AI.

Mentorship

2022-2023 Nora Chen, Honors thesis student, now at UC Berkley.

2021-2022 Jane Yang, Honors thesis student, now at UT Austin.

Academic Service

2023 Reviewer of CogSci.

Skills

Modelling and Analysis: Python, PyTorch, Julia, Gen, R, MATLAB, C++
Experimental Design: JavaScript, HTML, CSS
Software and Tools: git, Adobe CC, LaTeX

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