

Kristine Zheng

✉ kxzheng@stanford.edu | 🏠 kristinezheng.github.io | 🐦 x.com/kristinexzheng

Education

Massachusetts Institute of Technology

B.S. IN COMPUTER SCIENCE AND BRAIN & COGNITIVE SCIENCES; GPA: 5.0/5.0

- Minor in Women's and Gender Studies

Cambridge, MA

Sept. 2020 – May 2024

Awards & Honors

- 2024 - IRiSS Predoctoral Research Fellowship, Stanford
- 2023 - 2024 EECS | CS + HASS Undergraduate Research & Innovation Scholarship, MIT
- 2024 Phi Beta Kappa, MIT Xi Chapter
- 2024 Undergraduate Research Award, MIT BCS
- 2023, 2024 Academic Award, MIT BCS
- 2023 Eta Kappa Nu Society, MIT Beta Theta Chapter
- 2021 - 2023 Undergraduate Research Opportunities Program (UROP) Grant, MIT
- 2022 Princeton Neuroscience Institute Summer Internship Program (PNI-SIP)

Research Experience

Cognitive Tools Lab, Stanford

ADVISED BY JUDITH FAN

July 2024 - Present

- Investigating social and cognitive mechanisms that support the development of statistics reasoning (e.g. problem solving, visualization, programming, natural language) in formal education through large-scale field experiments

Computational Cognitive Science Group, MIT

ADVISED BY JOSHUA TENENBAUM, VIVIAN PAULUN, MAX SIEGEL

Sept. 2022 - Present

- Characterizing childhood development of physical stability and support reasoning, co-advised by Laura Schulz (MIT ECCL)
- Evaluated the joint perception of object shape and physical properties (e.g., elasticity, viscosity) in both humans and neural network models.
- Leveraged a Bayesian theory-based intuitive physics model to programmatically generate 3D structures, based on human stability reasoning.

Niv Lab, Princeton

ADVISED BY Yael Niv, Rachel Bedder

June 2022 - Aug. 2022

- Developed a real-time stimulus generator pipeline and studied the effects of valence on latent state inference
- Simulated reinforcement learning models (e.g. Markov decision processes, actor-critic) for human behavioral studies

DiCarlo Lab, MIT

ADVISED BY JAMES DICARLO, KOHITIJ KAR

Sept. 2021 - May 2022

- Comparing object size representation bias in DCNNs and primate IT, and contributed benchmarks for primate-aligned vision models

Presentations & Publications

Paulun, V.C., Siegel, M.H., **Zheng, K.**, & Tenenbaum, J. (2024). Perceiving materials and objects from semi-visible interactions. *Annual meeting of the Vision Science Society (VSS), St. Petersburg, FL, USA*

Paulun, V.C., Siegel, M.H., **Zheng, K.**, & Tenenbaum, J. (2024). Seeing the invisible: Online use of rich physical constraints in perception. *Conference of Experimental Psychologists (TeaP), Regensburg, DE*

Zheng, K. & Yu, I. (2023) *Jenga as a Performance Art: Computational Generation of Surprisingly Stable Structures*. Poster presented at IEEE MIT Undergraduate Research Technology Conference (URTC). Cambridge, MA.

Zheng, K., Bedder, & R., Niv, Y. (2022). *How do Humans Generalize and Discriminate Between Experiences?* Poster presented at the Society for Neuroscience, FUN Undergraduate Poster Session. San Diego, CA.

Paulun, V.C., **Zheng, K.**, & Kar, K. (2022). Distributed population activity in the macaque inferior temporal cortex reflects perceived not retinal object size. *Annual Meeting of the Society for Neuroscience (SfN), San Diego, CA, USA*

Gong, Y., Brauer M.H., **Zheng, K.** & Li, W. (2020). Accelerated, Reactive Aging Tests of Parylene C, SiO₂, and Si₃N₄ Packages for Chronic Neural Implants. *IEEE 15th International Conference on Nano/Micro Engineered and Molecular System (NEMS)*. San Diego, CA.

Gong, Y., Liu, W., Wang, R., Brauer, M.H., **Zheng, K.**, & Li, W. (2020). Stability Performance Analysis of Various Packaging Materials and Coating Strategies for Chronic Neural Implants under Accelerated, Reactive Aging Tests. *Micromachines*, 11(9), 810.

Teaching Experience

- Fall '24 **PSYCH 10 Introduction to Statistical Methods**, Stanford
- Sp. '23, '24 **9.00 Introduction to Psychology**, MIT

Professional Experience

TigerGraph

DEVELOPER ADVOCATE INTERN

Jan. - Aug. 2022

- Developed full-stack applications, worked with clients and user community, and led workshops (Women Who Code)

Optum

SOFTWARE ENGINEERING INTERN WITH THE ADVANCED TECHNOLOGY COLLABORATIVE

June - Aug. 2021

- Constructed recommendation systems with machine learning graph algorithms

Service & Outreach

OUTREACH

- Fall '24 **Stanford Psychology Paths to PhD program** Mentor & Volunteer
- Fall '24 - **Stanford Science Penpals Program** Penpal & Mentor
- Fall '23 **"Neuroscience behind perceptual illusions"** seminar for HS students with MIT ESP Splash
- Sp '23 **"Jenga as a Performance Art"** MIT Presidential Inauguration Weekend Exhibit – Garden of the Mind: Reflections & explorations of the mind through its physical creations.

UNIVERSITY & COMMUNITY SERVICE

- Sp '24 **MIT BCS Visiting Committee** Student Representative
- 2023 - 2024 **MIT Ad Hoc Committee on Arts, Culture, and DEI** Student Representative
- 2023 - 2024 **MIT Voxel Lab (Art & Music Innovation Makerspace)** Staff & Mentor
- 2021 - 2024 **MIT Peers Leading Education About Sexuality and Speaking Up for Relationship Empowerment (PLEASURE)** Facilitator
- 2020 - 2024 **MIT Undergraduate Association** Exec. and Project Lead (Banana Lounge, Craft Market)

Skills & Misc

Programming: Python, JavaScript, R, MATLAB, SQL/GSQL, HTML & CSS

Research Tools: PyTorch, jsPsych, ROS, Blender, Realflow, Qualtrics, Adobe Creative Suite

Misc: Design – created logos and merchandise for various orgs. at Umich, MIT, and Stanford