

Kristine Zheng

She/Her

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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 -

- 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, LAURA SCHULZ (ECCL)

Sept. 2022 -

- Spearheading human studies characterizing developmental physics reasoning, in collaboration with Dr. Laura Schulz
- Designed behavioral experiments and employed neural network models to investigate mechanisms supporting the visual perception of objects' physical properties, including elasticity and viscosity
- Leveraged a Bayesian theory-based intuitive physics model to assess the stability of programmatically generated 3D structures

Niv Lab, Princeton

ADVISED BY YAEL NIV

June 2022 - Aug. 2022

- Developed a real-time stimulus generator pipeline and designed a study with the effect of valence in 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

- Evaluating object size representation in DCNNs and primate IT

Presentations & Publications

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 but not current deep neural networks predict the ponzo illusion. *Journal of Vision*, 22(14).

Gong, Y., Brauer M.H., **Zheng, K.** and 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.**, and 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.

INVITED TALKS

April 2023. *Jenga as a Performance Art*. Garden of the Mind, MIT.

Teaching Experience

TEACHING ASSISTANT

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 '23 **MIT ESP Splash** "Neuroscience behind perceptual illusions" seminar for HS students

UNIVERSITY & COMMUNITY SERVICE

2023 - 2024 **MIT Ad Hoc Committee on Arts, Culture, and DEI** 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

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 MIT and Stanford