Li, Yuxuan (Effie)

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Education

2019 – **Ph.D. Candidate** in Cognitive Psychology, Stanford University
Trainee, *Center for Mind, Brain, Computation and Technology*

2013 – 2017 **B.S.** in Computer Science and **B.S.** in Psychology, Trinity College *(summa cum laude)*

Research Positions

2019 – **Ph.D. Researcher**, Department of Psychology, *Stanford University*
- Researching hierarchical decision making and task decomposition in humans and deep learning models
- Investigating the acquisition of structured decision rules and multi-task learning in transformer neural networks
- Research on the role of contextualization in goal/subgoal-directed planning in humans

2017 – 2019 **Research Specialist**, Computational Memory Lab, *University of Pennsylvania*
- Built neural decoders of human episodic memory using large-scale EEG data

2016 – 2017 **Student Researcher**, Department of Psychology, *Trinity College*
- Research on human attention, visual search, and sentiment analysis

2016 **Summer Research Intern**, Columbia Business School, *Columbia University*
- Developed predictive models of social investors, companies, and investment activities

Publications

in prep **Li, Y.**, and McClelland, J.L. (2022). Emergent structures in sequential decision making in Transformers.

under review **Li, Y.**, Pazdera, J.K., and Kahana, M.J. (2022). EEG Decoders Track Memory Dynamics.

2022 **Li, Y.**, and McClelland, J.L. (2022). A weighted constraint satisfaction approach to human goal-directed decision making. *PLOS Computational Biology*.

2022 Kahana, M.J., Lohnas, L.J., Healey, K., . . ., **Li, Y.**, . . ., Weidemann, C.T. (2022). The Penn Electrophysiology of Encoding and Retrieval Study. *PsyArXiv*.

2022 Katerman, B.S., **Li, Y.**, Pazdera, J.K., Keane, C., & Kahana, M.J. (2022). EEG biomarkers of free recall. *NeuroImage*.

2018 Grubb, M.A., **Li, Y.** (2018). Assessing the role of accuracy-based feedback in value-driven attentional capture. *Attention, Perception, & Psychophysics*.

Selected Talks and Presentations

2022 **Li, Y.** (*Apr 2022*). A weighted constraint satisfaction approach to human goal-directed decision making. *Cognitive Tools Lab, University of California, San Diego.*

2021 **Li, Y.** (*Feb 2021*). Model-based reinforcement learning and the reinforcement learning

framework for human behavior. *TA Lecture in PSYCH 209, Stanford University.*

2021 **Li, Y.** (Oct 2020 & Oct 2021). Building online psychology experiments with Jspsych: a tutorial. *TA Lecture in PSYCH 251, Stanford University.*

2020 **Li, Y.** (May 2020). Plan forward and backward in time. *FriSem seminar, Department of Psychology, Stanford University.*

2018 **Li, Y.**, & Kahana, M.J. (2018). Neural dynamics of memory encoding and retrieval. *Talk at the 51st Annual Meeting of the Society of Mathematical Psychology, Madison, WI.*

Honors and Awards

2017 Phi Beta Kappa, The Psychology Prize, and The Ralph E. Walde Prize in Computer Science, *Trinity College.*

2013 – 2016 Dean's Scholar (top 5%), Faculty Honors, Holland Scholar, *Trinity College.*

Teaching Experience

2020 – **Teaching Assistant**, Department of Psychology, *Stanford University*
- Graduate courses: Experimental Methods, Neural Network Models of Cognition, Brain Decoding, Developmental Psychology

2015 – 2017 **Teaching Assistant**, Department of Computer Science, *Trinity College*
- Undergraduate courses: Introduction to Computing, Mathematical Foundations of Computing

Service

Reviewer Cognitive Science Society, 2022 –

Technical Skills

Coursework Graduate coursework in deep learning, reinforcement learning, deep multi-task and meta-learning

Languages Python (pytorch, pytorch lightning, einops, scikit-learn, scipy, numpy, pandas, matplotlib), R (tidyr, dplyr, lme4, ggplot2, rtdists), LaTeX, some experience with JavaScript (jquery)

Statistics Linear modeling, generalized linear modeling, mixed-effects models