

## RESEARCH SUMMARY

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Computational cognitive scientist and AI safety researcher bridging human cognition and LLM alignment. Develops **interpretable, pluralistic, and steerable frameworks** for **LLM safety and agentic robustness**, integrating **reasoning, synthetic data generation, and human-grounded evaluation**.

## EDUCATION

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<b>University of California, Berkeley</b>	Berkeley, CA
Ph.D. in Neuroscience with concentrations in Computation and Cognition, GPA: 3.97/4.00	2021–2026
<b>Cornell University</b>	Ithaca, NY
B.A. in Computer Science and Mathematics, Minor in Cognitive Science, GPA: 4.01/4.30	2017–2020

## RESEARCH EXPERIENCES

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<b>Amazon Web Services (AWS) — Agentic AI</b>	Seattle, WA
Applied Scientist Intern	May 2025 – August 2025
<ul style="list-style-type: none"><li>– Led research on <b>adversarial robustness</b> of tool-enabled LLM agents via multi-turn attack–defense evaluation.</li><li>– Built scalable pipelines for <b>synthetic data generation and context engineering</b> in agent benchmarking.</li><li>– Produced a <b>first-authored publication</b> and open-source benchmark on agentic AI safety.</li></ul>	

<b>Allen Institute for Artificial Intelligence (Ai2)</b>	Seattle, WA
Research Intern	May 2024 – August 2024
<ul style="list-style-type: none"><li>– Built <b>SafetyAnalyst</b>, an interpretable and steerable LLM safety moderation framework.</li><li>– Designed multi-stage pipeline combining <b>reasoning, synthetic data, and model distillation</b>.</li><li>– Resulted in a first-author <b>ICML 2025 paper</b> and open-sourced models, data, and code suite.</li></ul>	

<b>University of California, Berkeley</b>	Berkeley, CA
Ph.D. Researcher, Computational Cognitive Neuroscience Lab (Advisor: Anne Collins)	2021 – 2026 (expected)
<ul style="list-style-type: none"><li>– Develops computational models of <b>hierarchical and compositional learning</b> in human decision-making.</li><li>– Integrates <b>reinforcement learning, Bayesian inference, and neural data</b> to explain adaptive behavior.</li><li>– Leads behavioral and modeling studies on <b>exploration, reward processing, and transfer learning</b>.</li><li>– Created <b>latent state estimation frameworks</b> for cognitive model fitting.</li><li>– Published in top journals including <b>Cognition</b> and <b>Journal of Mathematical Psychology</b>.</li></ul>	

## TECHNICAL SKILLS

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- **Large Language Models:** Prompt Engineering, Synthetic Data Generation, Fine-Tuning, Evaluation, Red-Teaming, Model Behavior Analysis, Human-Centered Alignment, Crowdsourcing Pipelines
- **Machine Learning:** PyTorch, Hugging Face, TensorFlow, CUDA, Reinforcement Learning, Bayesian Modeling
- **Programming & Infrastructure:** Python, R, C/C++, Java, Bash, Git, Linux, HPC/Cluster Environments
- **Data Analysis:** NumPy, pandas, SciPy, Matplotlib, Regression Modeling, SQL, MATLAB

## GRANTS AND FELLOWSHIPS

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- UC Berkeley ICBS Grant (\$5,000; *Co-recipient*) 2024-2025
- Society for Neuroscience Trainee Professional Development Award 2024
- CogSci Conference Travel Grant 2023
- Milton I. and Florence Mack Neurology Research Fund 2021-2022
- Summer Undergraduate Research Fellowship, Caltech 2018

## SELECTED PUBLICATIONS

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- [1] **J.-J. Li**, J. He, C. Shang, D. Kulshreshtha, X. Xian, Y. Zhang, H. Su, S. Swamy, and Y. Qi, *STAC: When innocent tools form dangerous chains to jailbreak LLM agents*, 2025. arXiv: [2509.25624](https://arxiv.org/abs/2509.25624) [[cs](#).[CR](#)].
- [2] **J.-J. Li**, J. Mire, E. Fleisig, V. Pyatkin, M. Sap, and S. Levine, “PluriHarms: Benchmarking the full spectrum of human judgments on AI harm”, in *NeurIPS CogInterp Workshop (Accepted)*, 2025.
- [3] **J.-J. Li**, V. Pyatkin, M. Kleiman-Weiner, L. Jiang, N. Dziri, A. G. E. Collins, J. S. Borg, M. Sap, Y. Choi, and S. Levine, “SafetyAnalyst: Interpretable, transparent, and steerable safety moderation for AI behavior”, in *ICML*, 2025.
- [4] **J.-J. Li** and A. G. Collins, “An algorithmic account for how humans efficiently learn, transfer, and compose hierarchically structured decision policies”, *Cognition*, vol. 254, p. 105967, 2025.
- [5] **J.-J. Li**, C. Chen, and A. G. Collins, “Humans integrate heuristics and bayesian inference to efficiently explore under uncertainty”, in *Proceedings of the Annual Meeting of the Cognitive Science Society*, 2025.
- [6] T.-F. Pan, **J.-J. Li**, B. Thompson, and A. GE Collins, “Latent variable sequence identification for cognitive models with neural network estimators”, *Behavior Research Methods*, vol. 57, no. 10, p. 272, 2025.
- [7] **J.-J. Li**, C. Shi, L. Li, and A. G. Collins, “Dynamic noise estimation: A generalized method for modeling noise fluctuations in decision-making”, *Journal of Mathematical Psychology*, vol. 119, p. 102842, 2024.
- [8] **J.-J. Li**, L. Xia, F. Dong, and A. G. Collins, “Credit assignment in hierarchical option transfer”, in *Proceedings of the Annual Meeting of the Cognitive Science Society*, 2022.

## SELECTED TALKS & PRESENTATIONS

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- **AI Agent Safety Social Panel**, ICML 2025 (Invited Panel), Vancouver, Canada
- **Interpretable LLM Safety Moderation**, ICML 2025 (Poster), Vancouver, Canada
- **Interpreting Human Judgments on AI Harm**, NeurIPS CogInterp Workshop 2025 (Poster), San Diego, CA
- **Heuristics and Bayesian Inference for Efficient Exploration**, CogSci 2025 (Talk), San Francisco, CA
- **Dynamic Noise Modeling in Decision-Making**, Cognitive & Computational Neuroscience in Development Group 2024 (Invited Talk), Würzburg, Germany
- **A Generalized Method for Dynamic Noise Inference**, CogSci Conference 2023 (Talk), Sydney, Australia
- **Credit Assignment in the Transfer of Hierarchical Options**, CogSci Conference 2022 (Talk), Toronto, Canada