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EUNICE YIU

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Research Profile

Cognitive scientist studying how children and adults acquire, generalize, and transfer knowledge. I combine experimental benchmarks and large-scale behavioral data to study analogical reasoning, causal world model formation, and adaptation to novel environments, with implications for education and intelligent systems.

Employment

Sept 2025 - present	**University of California, Berkeley, Berkeley, CA** Postdoctoral Scholar, Department of Psychology Advisor: Alison Gopnik

Education

Aug 2020 – Aug 2025	**University of California, Berkeley, Berkeley, CA** Ph.D. in Psychology Dissertation: Relational Reasoning in Children and Machines: Insights into Causal Generalization and Innovation Committee: Alison Gopnik, Jitendra Malik, Steve Piantadosi & Shiry Ginosar
Aug 2016 – May 2020	**Cornell University, Ithaca, NY** B.A. in Psychology (Magna Cum Laude), Biological Sciences (Magna Cum Laude), and Economics; Cumulative GPA: 3.996/4.0

Programming Skills

- Python (statistical analysis, data visualization, computational modeling, PyTorch, PyGame)
- R (statistical analysis, data visualization, Bayesian modeling with Stan)
- MATLAB (statistical analysis, computational modeling)
- JavaScript / jsPsych, HTML/CSS (behavioral experiments, websites)

Grants & Fellowships

2025-2026	**Canadian Institute for Advanced Research Next Generation Trainee Fellowship for the Learning in Machines & Brains program** Amount: $10,000 CAD
2025-2026	**7th Google - Berkeley Artificial Intelligence Research Commons Grant** Title: Teaching Causal Tool Use to Vision–Language Models with Human Development Data Amount: $10,000 in Google Cloud Credits
2025	**Departmental Semester Fellowship at UC Berkeley** Amount: $18,750
2024-2025	**6th Google - Berkeley Artificial Intelligence Research Commons Grant** Title: Learning and Optimizing Causal Structures through Intrinsic Objectives: A Comparative Study of Human and Artificial Agents

Amount: $41,000 (with $20,000 in Google Cloud Credits)

2023-2024 **5th Meta - Berkeley Artificial Intelligence Research Commons Grant**
Title: A Curriculum for Foundational AI Models Inspired by Human Cognition
Amount: $35,000

2023, 2025 **Berkeley Graduate Division Conference Travel Grant**
Amount: $1,500 (each year)

Honors & Awards

2025 **Society for Research in Child Development SECC Poster Competition Winner**
Poster Title: Thinking Step-by-Step Facilitates Visual Analogical Reasoning in Children and Adults

2023 **Curiosity, Creativity and Complexity Conference Travel Award**, Columbia University Poster
Title: Discovering New Functions in Everyday Tools By Children, Adults and LLMs

2023 **Computational Cognitive Models of Learning and Development Workshop Travel Award**, Harvard University

2020 **Phi Beta Kappa**, Chapter of Cornell University
Honor Society Membership for top 10% graduating class

2020 **T.A. Ryan Award** , Cornell University
Best Undergraduate Honors Project in Psychology
Thesis Title: Does Toddler Mental Rotation Relate to Their Processing Strategies and Play?

2020 **Robert R. Capranica Award**, Cornell University
Undergraduate Research Award for Outstanding Thesis in Neuroethology
Thesis Title: The Relationship between Spatial Occupancy Time & Firing Patterns of Hippocampal CA1 Neurons in Response to Changes in the Social Context

Publications

* equal contribution, † undergraduate mentee

1. **Yiu, E.**, Allen, K.R., Ginosar, S., & Gopnik, A. (*in press*). Empowerment Gain and Causal Model Construction: Children and adults are sensitive to controllability and variability in their causal generalization and interventions. *Philosophical Transactions of the Royal Society A*. (Special Issue: World models, A(G)I, and the Hard problem(s) of life–mind continuity).
2. Dahmani, A.*, **Yiu, E.***, & Gopnik, A. (*2025*). Children Spontaneously Design Curricula to Tackle Challenging Tasks. In *Proceedings of the Annual Meeting of the Cognitive Science Society* (Vol. 47).
3. **Yiu, E.,** Qraitem, M., Wong, C.†, Majhi, A. N.†, Bai, Y., Ginosar, S., ... & Saenko, K. (2025). KiVA: Kid-inspired visual analogies for testing large multimodal models. In *International Conference on Learning Representations*.
4. Goddu, M. K.*, **Yiu, E.***, & Gopnik, A. (2024). Causal relational problem solving in toddlers. *Cognition*, *254*, 105959.
5. **Yiu, E.**, Kosoy, E., & Gopnik, A. (2024). Transmission versus truth, imitation versus innovation that large language and language-and-vision models cannot (yet). *Perspectives on Psychological Science*, 17456916231201401.
6. **Yiu, E.***, Sandbrink, K. J.*, & Gopnik, A. (2024). To observe or to bet? Investigating purely exploratory and purely exploitative actions in children, adults, and computational models. In *Proceedings of the Annual Meeting of the Cognitive Science Society* (Vol. 46).
7. Wu, W. Y., **Yiu, E.**, Ophir, A. G., & Smith, D. M. (2023). Effects of social context manipulation on dorsal and ventral hippocampal neuronal response. *Hippocampus*, *33*(7), 830-843.

8. **Yiu, E.**, Collins, J., & Gopnik, A. (2022). Three-Dimensional Object Completion in Humans and Computational Models. In *Proceedings of the Annual Meeting of the Cognitive Science Society* (Vol. 44).
9. Bambha, V. P., Beckner, A. G., Shetty, N., Voss, A. T., Xie, J., **Yiu, E.,** ... & Casasola, M. (2022). Developmental Changes in Children's Object Insertions during Play. *Journal of Cognition and Development*, 1-20.

Selected Conference Presentations

* equal contribution, † undergraduate mentee

1. **Yiu, E.**, Majhi, A.N.†, Allen, K.R., Ginosar, S., & Gopnik, A. Children use both controllability and variability for generalization (2025). Poster presented at the 46th Annual Meeting of the Cognitive Science Society; 2025 July 30-August 2; San Francisco, USA.
2. **Yiu, E.,** & Gopnik, A. Thinking Step-by-Step Facilitates Visual Analogical Reasoning in Children and Adults (2025). Poster presented at the Society for Research in Child Development; 2025 May 3; Minneapolis, MN, USA.
3. **Yiu, E.,** Qraitem, M., Majhi, A. N.†, Wong, C.†, Bai, Y., Ginosar, S., Gopnik, A. & Saenko, K. KiVA: Kid-inspired visual analogies for testing large multimodal models (2025). Poster presented at the Thirteenth International Conference on Learning Representations; 2025 April 24; Singapore.
4. **Yiu, E.,** Qraitem, M., Wong, C.†, Majhi, A. N.†, Bai, Y., Ginosar, S., ... & Saenko, K. KiVA: Kid-inspired visual analogies for testing large multimodal models (2024). Spotlight talk presented at the Multimodal Algorithmic Reasoning Workshop at NeurIPS; 2024 December 15; Vancouver, Canada.
5. **Yiu, E.***, Qraitem, M., Wong, C.†, Majhi, A. N.†, Bai, Y., Ginosar, S., ... & Saenko, K. Kid-inspired visual analogies for testing large multimodal models (2024). Talk presented at the Fifth International Conference on Analogy (Symposium: *Has Analogical Reasoning Emerged in LLMs?*); 2024 July 23; Amsterdam, The Netherlands.
6. **Yiu, E.***, Sandbrink, K.*, Liu, E.†, & Gopnik, A. To observe or to bet? Investigating purely exploratory and purely exploitative actions in children, adults, and computational models (2023). Poster presented at the 45th Annual Meeting of the Cognitive Science Society; 2024 July 24-27; Rotterdam, The Netherlands.
7. **Yiu, E.**, Goddu, M., & Gopnik, A. Causal-functional Reasoning in Children and AI (2024). Talk presented at the Functions, relations, and abstractions in infants, preschoolers, and AI Symposium at Cognitive Development Society Conference; 2024 March 23; Pasadena, CA, USA.
8. **Yiu, E.***, Sandbrink, K.*, Liu, E.†, & Gopnik, A. Children prioritize purely exploratory actions in observe or bet tasks (2023). Poster presented at the Intrinsically Motivated Open-ended Learning Workshop at NeurIPS; 2023 December 16; New Orleans, LA, USA.
9. **Yiu, E.***, Dahmani, A.*, Lee, T. E., Ke, N. R., Kroemer, O., & Gopnik, A. Towards Understanding Automated Causal Curriculum Learning in Humans and Reinforcement Learning Agents (2023). Talk presented at the Interactive Causal Learning Conference; 2023 December 1-2; Boca Raton, FL, USA.
10. **Yiu, E.***, Dahmani, A.*, Lee, T. E., Ke, N. R., Kroemer, O., & Gopnik, A. Towards Understanding Automated Causal Curriculum Learning in Humans and Reinforcement Learning Agents (2023). Talk and poster presented at the 6th International Workshop on Intrinsically Motivated Open-ended Learning; 2023 September 13-15; Paris, France
11. **Yiu, E.**, & Gopnik, A. Discovering New Functions in Everyday Tools by Children, Adults and LLMs (2023). Poster presented at the Curiosity, Creativity and Complexity Conference; 2023 May 23-25; Columbia University, NY, USA.
12. **Yiu, E.**, & Gopnik, A. Object Exploration Influences Three-dimensional Object Completion Preferences in Children (2023). Flash Talk presented at Society for Research in Child Development Biennial Conference; 2023 March 23-25; Salt Lake City, UT, USA.

13. **Yiu, E.**, Collins, J., & Gopnik, A. Three-Dimensional Object Completion in Humans and Computational Models (2022). Talk presented at CogSci; 2022 July 28-30; Toronto, Canada.
14. **Yiu, E.**, Collins, J., & Gopnik, A. Symmetry Preference in 3D Object Completion (2022). Talk presented at From Neuroscience to Artificially Intelligent Systems (NAISys) Conference; 2022 April 5-9; Cold Spring Harbor Laboratory, NY, USA.

Invited Talks & Interviews

Feb 2026	AI Capabilities and Alignment Consensus Project Podcast
Jan 2026	Keynote at the Foundations of Agentic Systems Theory Workshop at AAAI, Singapore
Nov 2025	Cognitive Tools Lab (PI: Judith Fan), Stanford University, USA
April 2025	Computational Cognitive Development Lab (PI: Daphna Buchsbaum), Brown University, USA
March 2025	The Nature of Intelligence Workshop, Santa Fe Institute, USA
Feb 2025	Early Learning and Cognition Lab (PI: Caren Walker), UC San Diego, USA
Feb 2025	Computation, Cognition and Development Lab (PI: Tomer Ullman), Harvard University, USA
Oct 2024	Language and Cognition Lab (PI: Michael Frank), Stanford University, USA
June 2024	AI, Psychology and Neuroscience Summer Cluster, Simons Institute for the Theory of Computing, USA
May 2024	Brain Science and Large Language Models Symposium, Leopoldina and Max Planck Institute for Brain Research, Germany (media coverage: *Frankfurter Allgemeine Zeitung*)

Teaching Experience

Graduate Student Instructor

Fall 2023	**PSYCH101: Research and Data Analysis in Psychology** Instructor: Arman Catterson, UC Berkeley
Fall 2021	**PSYCH133: Psychology of Sleep** Instructor: Matthew Walker, UC Berkeley

Professional Service

Reviewer

Cognitive Science	Budapest CEU Conference on Cognitive Development (BCCCD), Cognitive Science Society (CogSci); Topics in Cognitive Science, Journal of Experimental Psychology
Artificial Intelligence	Association for Computational Linguistics (ACL), Conference on Language Modeling (COLM), Conference on Computer Vision and Pattern Recognition (CVPR)

Co-Organized Workshops and Challenges

2026	Humans of Generative AI, Conference Workshop at Computer Vision Pattern Recognition (CVPR)
2026	Simons Institute for the Theory of Computing: AI, Psychology and Neuroscience Summer Cluster
2026	A Unified Account of Motivation in Development, Preconference Workshop at Cognitive Development Society (CDS)
2025	Kid-inspired Visual Analogies (KiVA) Challenge (multi-month competition), Guest Track Challenge at Google DeepMind's Third Perception Test Workshop, International Conference on Computer Vision (ICCV)
2024	AI & Cognitive Development, Preconference Workshop at Cognitive Development Society (CDS)