Andrew Kyle Lampinen

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`https://lampinen.github.io`

Education	**Stanford University,** Ph.D. Psychology (Cognitive), 2015-2020
	• Center for Mind, Brain, Computation, and Technology Trainee.
	• Minor in Computer Science.
	UC Berkeley, B.A. Mathematics & Physics, 2010-2014

Research Positions	**Senior Research Scientist,** DeepMind, March 2022 - Present
	Research Scientist, DeepMind, October 2020 - February 2022
	PhD Intern, DeepMind, May 2019 - September 2019
	PhD Software Engineering Intern, Google Brain, June 2017 - September 2017
	Associate Professional Staff I, Johns Hopkins University Applied Physics Laboratory, June 2014 - July 2015
	Student Research Associate, Lawrence Berkeley National Laboratories, January - May 2012 & August - December 2012
	Summer Research Intern, A*STAR Institute of High Performance Computing, Singapore, June - August 2012
	Research Assistant, UC Davis Plant Sciences, June - August 2011

Honors	Cognitive Science Society Robert J. Glushko Dissertation Prize, 2021
	Ric Weiland Graduate Fellowship in the Humanities and Sciences, 2018-2020
	National Science Foundation Graduate Research Fellowship, 2015-2018
	Percy Lionel Davis Award for Excellence in Scholarship in Mathematics, 2014
	Berkeley Physics Olsen Scholar 2013-2014
	Berkeley Letters & Science Dean's List 2012-2014
	Berkeley Physics Undergraduate Research Scholar, Spring & Fall 2012

Selected Publications	Aaditya K. Singh, David Ding, Andrew Saxe, Felix Hill, **Andrew K. Lampinen** (2023), "Know your audience: Specializing grounded language models with the game of Dixit", *Proceedings of the European Chapter of the Association for Computational Linguistics*
	Andrew K. Lampinen, Ishita Dasgupta, Stephanie C. Y. Chan, Kory Matthewson, Michael Henry Tessler, Antonia Creswell, James L. McClelland, Jane X. Wang, Felix Hill (2022), "Can language models learn from explanations in context?", *Findings of Empiricical Methods in Natural Language Processing*
	Allison C. Tam, Neil. C. Rabinowitz, **Andrew K. Lampinen**, Nick A. Roy, Stephanie C. Y. Chan, DJ Strouse, Jane X. Wang, Andrea Banino, Felix Hill (2022), "Semantic exploration from language abstractions and pretrained representations", *Advances in Neural Information Processing Systems*
	Stephanie C. Y. Chan, Adam Santoro, **Andrew K. Lampinen**, Jane X. Wang, Aaditya Singh, Pierre H. Richemond, James L. McClelland, Felix Hill (2022), "Data Distributional Properties Drive Emergent In-Context Learning in Transformers", *Advances in Neural Information Processing Systems*
	Stephanie C. Y. Chan, Ishita Dasgputa, Junkyung Kim, Dharshan Kumaran, **Andrew K. Lampinen**, Felix Hill (2022), "Transformers generalize differently from information stored in context vs in weights", *Memory in Artificial & Natural Intelligence Workshop, NeurIPS 2022*
	Andrew K. Lampinen, Nicholas A. Roy, Ishita Dasgupta, Stephanie C. Y. Chan,

Allison C. Tam, James L. McClelland, Chen Yan, Adam Santoro, Neil C. Rabinowitz, Jane X. Wang, Felix Hill (2022), "Tell me why!—Explanations support learning of relational and causal structure", *International Conference on Machine Learning*

Stephanie C. Y. Chan*, **Andrew K. Lampinen***, Pierre H. Richemond*, Felix Hill* (2022), "Zipfian Environments for Reinforcement Learning", *Conference on Lifelong Learning Agents*, (*equal contribution)

Andrew K. Lampinen, Stephanie C. Y. Chan, Andrea Banino, Felix Hill (2021), "Towards mental time travel: a hierarchical memory for reinforcement learning agents", *Advances in Neural Information Processing Systems*

Andrew K. Lampinen, Stephanie C. Y. Chan, Adam Santoro, Felix Hill, (2021), "Publishing fast and slow: A path towards generalizability in psychology and AI", Commentary in *Behavioral and Brain Sciences*

Andrew K. Lampinen and James L. McClelland, (2020), "Transforming task representations to perform novel tasks", *Proceedings of the National Academy of Sciences*

Katherine L. Hermann* and **Andrew K. Lampinen***, (2020), "What shapes feature representations? Exploring datasets, architectures, and training", *Advances in Neural Information Processing Systems*, (*equal contribution)

James L. McClelland, Bruce L. McNaughton, and **Andrew K. Lampinen** (2020), "Integration of new information in memory: new insights from a complementary learning sytems perspective", *Proceedings of the Royal Society B*

Sébastien Racanière*, **Andrew K. Lampinen***, Adam Santoro, David P. Reichert, Vlad Firoiu, and Timothy P. Lillicrap, (2020), "Automated curricula through setter-solver interactions", *Proceedings of the 8th International Conference on Learning Representations*, (*equal contribution)

Felix Hill, **Andrew K. Lampinen**, Rosalia Schneider, Stephen Clark, Matthew Botvinick, James L. McClelland, and Adam Santoro (2020), "Environmental drivers of systematicity and generalisation in a situated agent", *Proceedings of the 8th International Conference on Learning Representations*

Andrew K. Lampinen and James L. McClelland, (2019), "Zero-shot task adaptation by homoiconic meta-mapping", *Learning Transferable Skills Workshop, NeurIPS*

Andrew K. Lampinen and Surya Ganguli, (2019), "An analytic theory of generalization dynamics and transfer learning in deep linear networks", *Proceedings of the 7th International Conference on Learning Representations*

Andrew K. Lampinen and James L. McClelland, (2018), "Different presentations of a mathematical concept can support learning in complementary ways", *Journal of Educational Psychology*

Robert X. D. Hawkins, Eric N. Smith, Carolyn Au, Juan Miguel Arias, Rhia Catapano, Eric Hermann, Martin Keil, **Andrew Lampinen**, Sarah Raposo, Jesse Reynolds, Shima Salehi, Justin Salloum, Jed Tan, and Michael C. Frank, (2018), "Improving the replicability of Psychological Science through pedagogy", *Advances in Methods and Practices in Psychological Science*

Steven S. Hansen, **Andrew K. Lampinen**, Gaurav Suri, and James L. McClelland, (2017), "Building on prior knowledge without building it in", *Commentary in Behavioral & Brain Sciences*

Andrew K. Lampinen, Shaw Hsu, and James L. McClelland, (2017), "Analogies emerge from learning dynamics in neural networks", *Proceedings of the 39th Annual Meeting of the Cognitive Science Society*

Selected Preprints

Andrew K. Lampinen (2022), "Can language models handle recursively nested grammatical structures? A case study on comparing models and humans", *arXiv*

Adam Santoro*, **Andrew K. Lampinen***, Kory Mathewson, Timothy Lillicrap, David Raposo, (2021), "Symbolic Behaviour in Artificial Intelligence", *arXiv*, (*equal contribution)

Andrew K. Lampinen and James L. McClelland, (2017), "One-shot and few-shot learning of word embeddings", *arXiv*

Selected Invited Talks	"Comparing humans and language models: challenges & opportunities", *126th Iternational Titisee Conference on NeuroAI*, March 2023
	"Comparing humans and language models: reasoning & grammar", *Carnegie Mellon University BrAIn Seminar*, February 2023
	"Language models show human-like content effects on reasoning", *London Machine Learning Meetup*, November 2022
	"Augmenting reinforcement Learning with language", *University of Edinburgh Computational Cognitive Science Seminar*, November 2022
	"Compositionality (avoiding the question)", *Brown University*, October 2022
	"Augmenting reinforcement learning with language", *University of Tokyo, Matsuo Lab*, August 2022
	"Tell me why—Explanations improve learning of relational and causal structure", *Spotlight Presentation, International Conference on Machine Learning*, July 2022
	"Tell me why—Explanations improve learning of relational and causal structure", *NYU Concepts & Categories Seminar*, February 2022
	"A computational framework for learning and transforming task representations", *Cognitive Science Society Glushko Dissertation Prize Talk*, July 2021
	"Task relationships, task transformations, and analogies", *Analogical Minds Seminar*, May 2021
	"Multi-task learning, transfer, and abstraction", *Parallel Distributed Processing and the Emergence of an Understanding of Mind*, Princeton University, September 2018
	"The Jabberwocky: One-shot and few-shot learning of word embeddings", *Meaning in Context Workshop*, Center for the Study of Language and Information, Stanford University, September 2017

Teaching Experience	**Teaching Assistant,** Stanford University Department of Psychology, 6 courses between Fall 2016 and Winter 2019

- Planned and taught discussion sections for undergraduate statistics & memory courses and graduate statistics & research methods courses.
- Gave lectures on reinforcement learning and wrote and graded homeworks for graduate course on Neural Network Models of Cognition.
- Held office hours.

Undergraduate Student Instructor, UC Berkeley Mathematics, Spring, Fall 2013, & Spring 2014

- Planned and taught discussion sections.
- Held office hours.
- Wrote and graded quizzes and midterms.

Teaching Assistant, UC Berkeley Early Academic Outreach Program, June-July 2013

- Held office hours.
- Substitute taught classes.

Other Work Experience	**Statistics Consultant,** Stanford University Department of Psychology, 2016-2017, 2019-2020

	• Advised graduate students on technical aspects of data collection, analysis, and modeling.
Service	**Reviewer:** • Artificial Intelligence • Nature Machine Intelligence • Nature Neuroscience • Neural Information Processing Systems • International Conference on Learning Representations • International Conference on Machine Learning • Association for Computational Linguistics • Cognitive Science Society • Deep Reinforcement Learning Workshop at NeurIPS • Conference on the Mathematical Theory of Deep Neural Networks (DeepMath) • Journal of Educational Psychology
Other Activities	**Carillon:** Carilloneur member of the Guild of Carilloneurs in North America (`www.gcna.org`). **Rock climbing:** Bouldering, sport, and trad. Former routesetter at Stanford Climbing Wall, set problems for Collegiate Climbing Series events.