

Education	<b>University of Southern California</b> Ph.D in Computer Science <i>Advisors: Dani Yogatama, Willie Neiswanger</i>	08/2022 - <i>present</i>
	<b>Carnegie Mellon University</b> B.S + M.S in Machine Learning <i>Magna Cum Laude</i>	08/2013 - 08/2019
Publications	<b>IsoBench: Benchmarking Multimodal Foundation Models on Isomorphic Representations</b> Deqing Fu <sup>α</sup> , Ghazal Khalighinejad <sup>α</sup> , <u>Ollie Liu</u> <sup>α</sup> , Bhuwan Dhingra, Dani Yogatama, Robin Jia, Willie Neiswanger In: <i>arXiv Preprint</i> . [ <a href="#">pdf</a> ] α: equal contribution, alphabetical order	
	<b>DeLLMa: A Framework for Decision Making Under Uncertainty with Large Language Models</b> <u>Ollie Liu</u> <sup>*</sup> , Deqing Fu <sup>*</sup> , Dani Yogatama, Willie Neiswanger In: <i>arXiv Preprint</i> . [ <a href="#">pdf</a> ] [ <a href="#">website</a> ] *: equal contribution	
	<b>On Retrieval Augmentation and the Limitations of Language Model Training</b> Ting-Rui Chiang, Xinyan Velocity Yu, Joshua Robinson, <u>Ollie Liu</u> , Isabelle Lee, Dani Yogatama In: <i>Proceedings of NAACL 2024 (short)</i> . [ <a href="#">pdf</a> ]	
	<b>Interpretable Diffusion via Information Decomposition</b> Xianghao Kong <sup>*</sup> , <u>Ollie Liu</u> <sup>*</sup> , Han Li, Dani Yogatama, Greg Ver Steeg In: <i>Proceedings of ICLR 2024</i> . [ <a href="#">pdf</a> ] [ <a href="#">code</a> ] *: equal contribution	
	<b>Approximating CKY with Transformers</b> Ghazal Khalighinejad, <u>Ollie Liu</u> , Sam Wiseman In: <i>Proceedings of Findings of EMNLP 2023</i> . [ <a href="#">pdf</a> ] [ <a href="#">code</a> ]	
	<b>How Does GPT-2 Compute Greater-Than?: Interpreting Mathematical Abilities in a Pre-Trained Language Model</b> Michael Hanna, <u>Ollie Liu</u> , Alexandre Variengien In: <i>Proceedings of NeurIPS 2023</i> . [ <a href="#">pdf</a> ]	
Industry Experiences	<b>Research Intern</b> with Qi Liu Reka AI	05/2023 - 07/2023

	<b>Research Resident</b> on Mechanistic Interpretability Redwood Research	01/2023 - 02/2023
	<b>Engineering Intern</b> with Stan Peshterliev Meta Reality Labs	05/2022 - 08/2022
	<b>Engineering Intern</b> with Bryan McCann You.com	02/2022 - 05/2022
	<b>Applied Science Intern</b> with Mehdi Noori Amazon Web Services	07/2021 - 12/2021
Honors and Awards	Provost's Fellowship, University of Southern California, 2022 Data Science Fellowship, Northwestern University, 2019 Royal E. Cabell Fellowship, Northwestern University, 2019 Senior Leadership Recognition, Carnegie Mellon University, 2018	
Teaching Experiences	TA, Machine Learning (Master), USC, Fall 2023 Co-Instructor and TA, Machine Learning (Ph.D Elective), NU, Fall 2021 Co-Instructor and TA, Mathematical Statistics (Ph.D Core), NU, Fall 2020 TA, Introduction to Machine Learning (Master), CMU, 2 Semesters. TA, Principles of Computing (Undergraduate), CMU, 4 Semesters.	
Relevant Courseworks	<b>Northwestern University:</b> Linear and Nonlinear Programming, Combinatorial Optimization, Stochastic Processes, Asset Pricing Theory <b>Carnegie Mellon University:</b> Advanced Machine Learning, Theoretical Statistics, Deep Learning, Reinforcement Learning, Scalable Learning Systems, Convex Optimization, Continuous-Time Finance	
Skills	<b>Software:</b> Python (JAX, PyTorch, Hugging Face), Linux, R, L <sup>A</sup> T <sub>E</sub> X <b>Language:</b> Chinese ( <i>native</i> ), English ( <i>proficient</i> , GRE V169+Q168)	
Activities	<b>President</b> of the <a href="#">USC AI Safety Group</a> . <b>Student organizer</b> of the <a href="#">Center for Optimization and Statistical Learning</a> at Northwestern University.	