

Education	University of Southern California Ph.D in Computer Science <i>Advisors: Dani Yogatama, Willie Neiswanger</i>	08/2022 - <i>present</i>
	Carnegie Mellon University B.S + M.S in Machine Learning <i>Magna Cum Laude</i>	08/2013 - 08/2019
Publications	On Retrieval Augmentation and the Limitations of Language Model Training Ting-Rui Chiang, Xinyan Velocity Yu, Joshua Robinson, Ollie Liu , Isabelle Lee, Dani Yogatama https://arxiv.org/abs/2311.09615 . <i>Preprint</i>	
	Interpretable Diffusion via Information Decomposition Xianghao Kong*, Ollie Liu *, Han Li, Dani Yogatama, Greg Ver Steeg https://arxiv.org/abs/2310.07972 . <i>ICLR 2024</i>	
	Approximating CKY with Transformers Ghazal Khalighinejad, Ollie Liu , Sam Wiseman https://arxiv.org/abs/2305.02386 . <i>Findings of EMNLP 2023</i>	
	How Does GPT-2 Compute Greater-Than?: Interpreting Mathematical Abilities in a Pre-Trained Language Model Michael Hanna, Ollie Liu , Alexandre Variengien https://arxiv.org/abs/2305.00586 . <i>NeurIPS 2023</i>	
	*: equal contribution	
Employment Experiences	Research Intern with Qi Liu Reka AI	05/2023 - 07/2023
	Research Resident on Mechanistic Interpretability Redwood Research	01/2023 - 02/2023
	Engineering Intern with Stan Peshterliev Meta Reality Labs	05/2022 - 08/2022
	Engineering Intern with Bryan McCann You.com	02/2022 - 05/2022
	Applied Science Intern with Mehdi Noori Amazon Web Services	07/2021 - 12/2021

Work in Progress	<p>Multi-Modal Decision Transformers <u>Ollie Liu</u>, Willie Neiswanger, Dani Yogatama</p> <p>Decision Making under Uncertainty with Foundation Models <u>Ollie Liu</u>, Willie Neiswanger, Dani Yogatama</p> <p>Evaluating Math Hallucinations in Large Language Models Harvey Fu, Deqing Fu, <u>Ollie Liu</u>, Dani Yogatama, Robin Jia</p> <p>Tuning Soft Instructions with Forward Passes <u>Ollie Liu</u>, Melody Xuan, Dani Yogatama</p>
Honors and Awards	<p>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</p>
Teaching Experiences	<p>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.</p>
Relevant Courseworks	<p>Northwestern University: Linear and Nonlinear Programming, Combinatorial Optimization, Stochastic Processes, Asset Pricing Theory Carnegie Mellon University: Advanced Machine Learning, Theoretical Statistics, Deep Learning, Reinforcement Learning, Scalable Learning Systems, Convex Optimization, Continuous-Time Finance</p>
Skills	<p>Software: Python (JAX, PyTorch, Hugging Face), Linux, R, L^AT_EX Language: Chinese (<i>native</i>), English (<i>proficient</i>, GRE V169+Q168)</p>
Activities	<p>Co-organizer of the USC AI Safety Group. Student organizer of the Center for Optimization and Statistical Learning at Northwestern University.</p>