

Landon Butler

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RESEARCH INTERESTS	My research lies at the intersection of machine learning, signal processing, and game theory, inspired by problems in the field of interpretability of foundation models.	
EDUCATION	University of California, Berkeley	
	Ph.D. candidate in Electrical Engineering and Computer Science	2027
	<i>Advised by Prof. Kannan Ramchandran</i>	
	University of Pennsylvania	
	M.S.E. in Data Science	2022
	Thesis: Convolutional Learning on Multigraphs <i>Advised by Prof. Alejandro Ribeiro</i>	
FELLOWSHIPS	University of Pennsylvania	
	B.S.E. in Systems Engineering	2022
	Concentration: Artificial Intelligence and Data Science	
	Minors: Computer Science, Mathematics	
	NSF Graduate Research Fellowship	2022
	Littlejohn Fellowship, <i>University of Pennsylvania</i>	2021
INTERNSHIPS	Machine Learning Intern at Apple, Summer 2025	
	Ph.D. Software Engineering Intern at Uber AI, Summer 2024	
	<i>Researched fine-tuning of text embedding models for use in search and relevance tasks</i>	
TEACHING	Graduate Student Instructor , <i>University of California, Berkeley EECS Department</i>	
	• Signals and Systems, Fall 2024	
	Teaching Assistant , <i>University of Pennsylvania ESE Department</i>	
	• Statistics for Data Science, Spring 2021, Summer 2021	
	• Graph Neural Networks, Fall 2021	
AWARDS	• Foundations of Data Science, Fall 2021	
	Best Paper Award, <i>Int. Conf. on Research in Air Transportation</i>	2022
	Best Paper Award, <i>Andrew P. Sage Memorial Conference</i>	2022
	Sidney Shore Award, <i>University of Pennsylvania</i>	2022
	Norman Gross Engineering Prize, <i>University of Pennsylvania</i>	2022
	Wolf Family Award in Systems Engineering, <i>University of Pennsylvania</i>	2021
	Excellence in Student Support, <i>University of Pennsylvania</i>	2021

PUBLICATIONS

Conference Papers

1. *ProxySPEX: Inference-Efficient Interpretability via Sparse Feature Interactions in LLMs*
Submitted to NeurIPS, 2025
Landon Butler*, Abhineet Agarwal*, Justin Singh Kang*, Yigit Efe Erginbas, Kannan Ramchandran, Bin Yu
2. *SPEX: Scaling Feature Interaction Explanations for LLMs*
ICML, 2025
Justin Singh Kang*, Landon Butler*, Abhineet Agarwal*, Yigit Efe Erginbas, Ramtin Pedarsani, Kannan Ramchandran, Bin Yu
3. *Learning to Understand: Identifying Interactions via the Mobius Transform*
NeurIPS, 2024
Justin Singh Kang, Yigit Efe Erginbas, Landon Butler, Ramtin Pedarsani, Kannan Ramchandran
4. *Non Commutative Convolutional Signal Models in Neural Networks: Stability to Small Deformations*
ICASSP, 2024
Alejandro Parada-Mayorga, Landon Butler, and Alejandro Ribeiro
5. *Learning with Multigraph Convolutional Filters*
ICASSP, 2023
Landon Butler, Alejandro Parada-Mayorga, and Alejandro Ribeiro
6. *Democratizing Aviation Emissions Estimation: Development of an Open-Source, Data-Driven Methodology*
ICRAT, 2022
Andy Eskenazi, Landon Butler, Arnav Joshi, and Megan Ryerson
7. *Learning Connectivity for Data Distribution in Robot Teams*
IROS, 2021
Ekaterina Tolstaya, Landon Butler, Daniel Mox, James Paulos, Vijay Kumar, and Alejandro Ribeiro

Journal Publications

1. *Convolutional Learning on Multigraphs*
IEEE Transactions on Signal Processing, 2023
Landon Butler, Alejandro Parada-Mayorga, and Alejandro Ribeiro
2. *Convolutional Filtering and Neural Networks with Non-Commutative Algebras*
IEEE Transactions on Signal Processing, 2023
Alejandro Parada-Mayorga, Landon Butler, and Alejandro Ribeiro
3. *Equitable Optimization of U.S. Airline Route Networks*
Computers, Environment and Urban Systems, 2023
Andy Eskenazi, Arnav Joshi, Landon Butler, and Megan Ryerson