

Landon Butler

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RESEARCH INTERESTS	My research focuses on developing trustworthy machine learning, with an emphasis on methods that interpret and explain the complex decision-making processes of foundation models, using techniques from signal processing and game theory.	
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	
	<i>Researched applications of machine learning for improving communication systems</i>	
	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