Aahlad Manas Puli

Email: aahlad@nyu.edu   **GitHub**: aahladmanas   **G-Scholar**: link   **Phone**: (929) 312-7360

Interests	Out-of-distribution Generalization, ML for health, Causality, Survival Analysis

Work

Faculty Fellow/Assistant Professor	Sept 2024 - Present
Center of Data Science, New York University	New York, USA

Education

Courant Institute, New York University	New York City, USA
PhD in Computer Science	Sept 2018 – Sept 2024
Advisor: Prof. Rajesh Ranganath	
Committee: Prof. Kyunghyun Cho, Prof. Rob Fergus, Dr. Kevin Murphy, Prof. Richard Zemel	

Courant Institute, New York University	New York City, USA
MS in Computer Science	Sept 2015 – May 2017
Advisors: David Sontag and Uri Shalit	

Indian Institute of Technology, Madras	Chennai, India
BTech + MTech in Electrical Engineering	Aug 2010 – July 2015

Awards

Janet Fabri Prize	2025
(awarded to the CS department's most outstanding dissertation)	
Apple Scholars in AI/ML PhD fellowship	2022
Rising Star, the Trustworthy ML Initiative	2021
MacCracken Doctoral Fellowship	2018
MS Thesis Fellowship (New York University)	2017

Talks

Tutorial at NeurIPS 2024	December 2024
Title: Out-of-Distribution Generalization: Shortcuts, Spuriousness, and Stability	

NYU Center for Data Science Lunch Seminar	October, 2023
Title: Don't blame Dataset Shift! Shortcut Learning due to Gradients and Cross Entropy	

INFORMS Annual Meeting 2023, Community Committee Choice Session	October, 2023
Title: Out-of-distribution generalization in Health	

Rising Star Seminar Series, Trustworthy ML Initiative	October, 2021
Title: Predictive modeling in the presence of nuisance-induced spurious correlations	

Selected Publications

Explanations that reveal all through the definition of encoding
Aahlad Puli[*], Nhi Nguyen[*], Rajesh Ranganath
NeurIPS, 2024

Nuisances via Negativa: Adjusting for Spurious Correlations via Data Augmentation
Aahlad Puli , Nitish Joshi, Yoav Wald, He He, Rajesh Ranganath
TMLR, June 2024

Robust Anomaly Detection for Particle Physics Using Multi-Background Representation Learning

Abhijith Gandrakota, Lily Zhang, **Aahlad Puli**, Kyle Cranmer, Jennifer Ngadiuba, Rajesh Ranganath, Nhan Tran

Machine Learning: Science and Technology, 2024

Don't blame Dataset Shift! Shortcut Learning due to Gradients and Cross Entropy

Aahlad Puli, Lily Zhang, Yoav Wald, Rajesh Ranganath

NeurIPS, 2023

New-Onset Diabetes Assessment Using Artificial Intelligence-Enhanced Electrocardiography

Neil Jethani, **Aahlad Puli**, Hao Zhang, Leonid Garber, Lior Jankelson, Yindalon Aphinyanaphongs, Rajesh Ranganath

Preprint

DIET: Conditional independence testing with marginal dependence measures of residual information

Mukund Sudarshan*, **Aahlad Puli***, Wesley Tansey, Rajesh Ranganath

AISTATS, 2023

OOD Generalization in the Presence of Nuisance-Induced Spurious Correlations

Aahlad Puli, Lily Zhang, Eric Oermann, Rajesh Ranganath.

ICLR, 2022

Causal Estimation with Functional Confounders

Aahlad Puli, Adler J Perotte, Rajesh Ranganath.

NeurIPS, 2020.

General Control Functions for Causal Effect Estimation from IVs

Aahlad Puli, Rajesh Ranganath.

NeurIPS, 2020.

X-CAL: Explicit calibration for survival analysis

Mark Goldstein*, Xintian Han*, **Aahlad Puli***, Adler J Perotte, Rajesh Ranganath.

NeurIPS, 2020.

All Publications

Explanations that reveal all through the definition of encoding

Aahlad Puli*, Nhi Nguyen*, Rajesh Ranganath

NeurIPS, 2024

Contrasting with Symile: Simple Model-Agnostic Representation Learning for Unlimited Modalities

Adriel Saporta, **Aahlad Puli**, Mark Goldstein, Rajesh Ranganath

NeurIPS, 2024

Robust Anomaly Detection for Particle Physics Using Multi-Background Representation Learning

Abhijith Gandrakota, Lily Zhang, **Aahlad Puli**, Kyle Cranmer, Jennifer Ngadiuba, Rajesh Ranganath, Nhan Tran

Machine Learning: Science and Technology, 2024

Nuisances via Negativa: Adjusting for Spurious Correlations via Data Augmentation

Aahlad Puli , Nitish Joshi, Yoav Wald, He He, Rajesh Ranganath

TMLR, June 2024

Don't blame Dataset Shift! Shortcut Learning due to Gradients and Cross Entropy

Aahlad Puli, Lily Zhang, Yoav Wald, Rajesh Ranganath

NeurIPS, 2023

Beyond Distribution Shift: Spurious Features Through the Lens of Training Dynamics

Nihal Murali, **Aahlad Puli**, Ke Yu, Rajesh Ranganath, Kayhan Batmanghelich

TMLR, 2023

New-Onset Diabetes Assessment Using Artificial Intelligence-Enhanced Electrocardiography

Lior Jankelson, Neil Jethani, **Aahlad Puli**, Hao hang, Leonid Garber, Yindalon Aphinyanaphongs, Rajesh Ranganath

Heart Rhythm, 2023

When More is Less: Incorporating Additional Datasets Can Hurt Performance By Introducing Spurious Correlations

Rhys Compton, Lily Zhang, **Aahlad Puli**, Rajesh Ranganath

MLHC, 2023

DIET: Conditional independence testing with marginal dependence measures of residual information

Mukund Sudarshan*, **Aahlad Puli***, Wesley Tansey, Rajesh Ranganath

AISTATS, 2023

OOD Generalization in the Presence of Nuisance-Induced Spurious Correlations

Aahlad Puli, Lily Zhang, Eric Oermann, Rajesh Ranganath.

ICLR, 2022

Learning invariant representations with missing data

Mark Goldstein, Jörn-Henrik Jacobsen, Olina Chau, Adriel Saporta, **Aahlad Puli**, Rajesh Ranganath, Andrew Miller

CLeaR, 2022

Individual treatment effect estimation in the presence of unobserved confounding using proxies: a cohort study in stage III non-small cell lung cancer

Wouter AC van Amsterdam, Joost JC Verhoeff, Netanja I Harlianto, Gijs A Bartholomeus,**Aahlad Puli**, Pim A de Jong, Tim Leiner, Anne SR van Lindert, Marinus JC Eijkemans, Rajesh Ranganath

Nature Scientific Reports, 2022

CONTRA: Contrarian statistics for controlled variable selection

Mukund Sudarshan, **Aahlad Puli**, Lakshmi Subramanian, Sriram Sankararaman, Rajesh Ranganath.

AISTATS, 2021.

Inverse-Weighted Survival Games

Mark Goldstein, Xintian Han, **Aahlad Puli**, Thomas Wies, Adler Perotte, Rajesh Ranganath

NeurIPS, 2020.

Causal Estimation with Functional Confounders

Aahlad Puli, Adler J Perotte, Rajesh Ranganath.
NeurIPS, 2020.

General Control Functions for Causal Effect Estimation from IVs

Aahlad Puli, Rajesh Ranganath.
NeurIPS, 2020.

X-CAL: Explicit calibration for survival analysis

Mark Goldstein*, Xintian Han*, **Aahlad Puli***, Adler J Perotte, Rajesh Ranganath.
NeurIPS, 2020.

Removing hidden confounding by experimental grounding

Nathan Kallus, **Aahlad Puli**, Uri Shalit.
NeurIPS, 2018.

Teaching	**Instructor, Data Science, NYU**	Fall 2024
	DS-GA.1006: Capstone Project and Presentation	
	Recitation Leader, Data Science, NYU	Fall 2020, 2023
	DS-GA.3001: Special Topics in Data Science: Machine Learning for Healthcare	
	Grader, Computer Science, NYU	Fall 2019, Spring 2021
	CSCI-GA-2565: Machine Learning	
Work	**Adobe Research,** Data Science Lab	San Jose, USA
	Research internship	Summer 2019
	Biomedical Informatics, Columbia University	New York City, USA
	Software Developer	July 2017 - June 2018
Service	**Organization**	
	Spurious Correlations, Invariance and Stability (SCIS), ICML	2022, 2023
	Reviewing	
	JMLR, TMLR, NeurIPS, UAI, ICLR, ICML, AISTATS, TMLR, and MLHC.	
	Top reviewer (UAI 2022)	2022