Statistical Foundations of Latent Structure and Representation Learning

Early-Career Researcher Poster Session

Wednesday, November 4, 2026 | 4:45–6:15 p.m.
Room 214, School of Social Work, Columbia University
1255 Amsterdam Avenue, New York, NY 10027
Presenters listed alphabetically by surname.

Ozgur (Oz) Beker | Columbia University
DisCoLoRA: Variational Disentanglement of Pretrained Representations
Coauthors: Bianca Dumitrascu

Abhinav Chakraborty | Columbia University
The Geometry of Multitask Learning: Sharp Rates for Shared Subspace Estimation
Coauthors: Tony Cai, Samory Kpotufe

Tianyi Chen | Johns Hopkins University
Vertex misalignment and changepoint localization in network time series
Coauthors: Mohammad Sharifi Kiasari, Sijing Yu, Youngser Park, Avanti Athreya, Vince Lyzinski, Carey Priebe, Zachary Lubberts

Chengyu Cui | University of Michigan
Marginal maximum likelihood estimation and asymptotic theory for latent variable models in high dimensions
Coauthors: Gongjun Xu

Mia Dai | Columbia University
Sparse-View Interpretable 3D Animal Behavior Representations for Neural Encoding and Decoding
Coauthors: Xinming Dai, Qihang Jin, Tianshu Tan, Baiyuan Chen, Hanrui Lyu, Lenny Aharon, Kyle Daruwalla, Xun Helen Hou, Matthew R. Whiteway, Liam Paninski, Yizi Zhang

Wilson G. Gregory | Columbia University
Warm-starting PDE solvers with any-dimensional machine learning
Coauthors: George A. Kevrekidis, Ben Blum-Smith, Soledad Villar

John Hood | University of Chicago
Near-Universal Multiplicative Updates for Nonnegative Einsum Factorization
Coauthors: Aaron Schein

Chengzhu Huang | Columbia University
From Good Starts to Optimal Inference: Generalized Latent Factor Models with Missingness and Implicit Regularization
Coauthors: Yuqi Gu

Yoonhaeng Hur | Columbia University
Inference for Clustering: Conformal Sets for Cluster Labels
Coauthors: Anirban Nath, Genevera Allen

Kasra Jalaldoust | Columbia University

How Useful is Causal Invariance for Domain Adaptation in Finite-Sample Settings?

Coauthors: Julia Kostin, Elias Bareinboim, Samory Kpotufe, Fanny Yang

Seunghyun Lee | Harvard University

High-dimensional latent class models beyond local independence

Coauthors: Yuqi Gu

Mengqi Lin | University of Michigan

Characterizing Identifiability in Boolean Factor Models

Coauthors: Gongjun Xu

Xindi Lin | Yale University

Who Benefits from Network Interventions? Debiased Machine Learning of Heterogeneous Causal Effects under Network Interference

Coauthors: Fan Li, Laura Forastiere

Jia Liu | Columbia University

Scalable Text-Embedding-informed Cognitive Diagnosis of Large Language Models

Coauthors: Zhiyu Xu, Yuqi Gu

Luigi Maria Malgieri | Duke University

DIRECT: Dirichlet Coupling for Multiview Clustering

Coauthors: David B. Dunson, Filippo Ascolani

Lorenzo Mauri | Duke University

Overfitted high-dimensional matrix factorizations via adaptive spectral shrinkage

Coauthors: David B. Dunson

Yaroslav Mukhin | Cornell University

Surrogate-powered Causal Inference with Censored Outcomes

Coauthors: Tereza Oprea, Arielle Anderer, Christina Yu, Jelena Bradic

Kieran Murphy | New Jersey Institute of Technology

Add latent stochasticity to track information flow through transformers

Michael Pressler | Columbia University

Cell-JEPA: Self-Supervised Representation Learning for Cell Trajectories

Coauthors: Been Park, Bianca Dumitrascu

Roshni Sahoo | Columbia University

Data Fusion for High-Resolution Estimation

Heejune Sheen | Yale University

Statistical Analysis of Synthetic Data and Verification for Fine-Tuning: A Linear Regression Framework

Coauthors: Harrison Zhou

Frank Shih | Memorial Sloan Kettering Cancer Center

Variable Selection and Uncertainty Quantification in High-Dimensional and Constrained Cox Models via Extended Fiducial Inference

Coauthors: Teng Fei

David Snider | Columbia University

Mixed Membership Model of Low-rank Matrices with Multimodal Extension

Coauthors: Zhongyuan Lyu, Jian Kang, Yuqi Gu

Runshi Tang | Columbia University

RECAP: Representation-Based Calibration with Amortized Pooling for Frequentist Simulation-Based Inference

Coauthors: Genevera Allen

Md Kaosar Uddin | Auburn University

Interpretable Domain Generalization for Multi-Site Functional Connectivity Analysis

Coauthors: Huan He, Jingyi Zheng

Emilie Wedenborg | Columbia University, Arts and Sciences

The Polytopal Neural Network

Coauthors: Anders V. Nørskov, Teresa Dorszewski, Kristoffer Wickstrøm, Morten Mørup

Zhiyu Xu | Columbia University

Latency-Response Theory Model: Evaluating Large Language Models via Response Accuracy and Chain-of-Thought Length

Coauthors: Jia Liu, Yixin Wang, Yuqi Gu

Haochen Yang | Columbia University

Latent Representation Learning for Quantifying Morphological Variability in Developing Mouse Gut Tube

Coauthors: Mohamed I. Gatie, Sonja Nowotschin, Anna-Katerina Hadjantonakis*, Bianca Dumitrascu*

Qishuo Yin | Princeton University

SMART Fine-tuning Factor Augmented Neural Lasso

Coauthors: Jinhang Chai, Jianqing Fan, Cheng Gao

Wenjin Zhang | Columbia University

Discrete Causal Representation Learning

Coauthors: Yixin Wang, Yuqi Gu