samsi
NSF·Duke·NCSU·UNC

Deep Learning Program Transition Workshop
March 12-13, 2020
SCHEDULE

Thursday, March 12th
Old Chemistry Building #116, Duke University

8:30 Registration and Welcome

Bayesian Methods in Deep Learning

9:00-9:30 **David Dunson** and **Edric Tam**, Duke University
Graph-structured Inference using Neural Nets

9:30-10:00 **Deborshee Sen**, SAMSI
Bayesian Dimension Reduction Using Neural Networks

10:00-10:30 **Bianca Dumitrascu**, SAMSI
Optimal Nonlinear Marker Selection for Cell Type Discrimination in Single Cell Analyses

10:30-11:00 Break/Conversations

Interpretable Deep Networks

11:00-11:50 **Cynthia Rudin**, Duke University
Two Projects on Interpretable Deep Learning: case-based reasoning and concept whitening

11:50-12:00 **Haiyang Huang**, Duke University
Dimension Reduction and Manifold Learning: a brief survey

12:00-12:30 **Matthew Phillips**, LifeOmic Health LLC
Landmark Priors for Biomedical Image Segmentation

12:30-2:00 Lunch (on your own)

Uncertainty Quantification for Deep Models

2:00-2:30 **Pulong Ma**, SAMSI
Kriging: Beyond Matern

2:30-3:00 **Anindya Bhadra**, Purdue University
Deep Neural Network Emulators beyond Gaussian Process Models

3:00-3:30 **Shan Shan**, Duke University
Dimension Reduction with Fiber Bundles

3:30-4:00 Break

Regularization Techniques for Training Deep Networks

4:00-4:30 **Wyatt Bridgman** and **Sorin Mitran**, University of North Carolina
Deep Neural Networks as a Coarse-Graining Procedure for Stochastic Microdynamics

4:30-5:00 **Quoc Tran-Dinh**, University of North Carolina
Shuffling and Sample-Based Schemes for Non-Convex Optimization: Convergence Guarantees

5:00-5:30 **Linjun Zhang**, Rutgers University
Shuffling and Sampled-Based Schemes for Non-convex Optimization: Convergence Guarantees

5:30-7:00 Poster Session and Reception

Friday March 13th
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Miscellany

9:00-10:00 **Jhuma Das**, University of North Carolina; **Adrian Green**, North Carolina State Univ.
Martin Mohlenkamp, Ohio University
Leveraging High-Throughput Screening Data

10:00-10:30 **David Banks**, SAMSI
Teaching Deep Learning

10:30-11:00 Break

11:00-11:30 **Guang Cheng**, Purdue University
Sharp Rate of Convergence for Deep Neural Network Classifiers under the Teacher-Student Setting

11:30-12:30 Review of Working Group Best Practices

12:30 Adjourn