Ronak Mehta

Email: ronakdm@uw.edu
GitHub: github.com/ronakdm

Education

University of Washington — Seattle, WA
Ph.D. in Statistics — Fall 2020–Current

- **Relevant Coursework:** Generative Models, Reinforcement Learning

Johns Hopkins University — Baltimore, MD
M.S.E. in Applied Mathematics & Statistics, GPA: 4.0/4.0 — Fall 2018–Spring 2019

- **Thesis**: "Independence Testing for Time Series", Advisor: Dr. Joshua Vogelstein
- **Relevant Coursework:** Nonlinear Optimization, Statistical Theory, Matrix Analysis & Linear Algebra, Applied Bayesian Statistics, Topics in Model Selection, Statistical Pattern Recognition

Johns Hopkins University — Baltimore, MD
B.S. in Applied Mathematics & Statistics, GPA: 3.6/4.0 — Fall 2015–Spring 2018

- **Relevant Coursework:** Real Analysis, Time Series Analysis, Intermediate Programming (C/C++), Data Structures (Java), Analysis of Algorithms

Experience

Microsoft Research — Redmond, WA
Research Intern in Special Projects — Summer 2020

- Proposed a comprehensive theoretical formulation of the transfer, multitask, and continual learning problems.
- Adapted and evaluated continual learning methods on a suite of natural language, vision, and time series tasks.

Johns Hopkins University Department of Biomedical Engineering — Baltimore, MD
Assistant Research Engineer in Dr. Joshua Vogelstein Laboratory — Fall 2017–Spring 2020

- Developed decision forest methods for structured data, uncertainty estimation, and continual learning.
- Developed hypothesis test to measure dependence between time series, with applications to fMRI data.

Goldman Sachs — New York, NY
Software Engineering Intern in Finance & Risk Technology — Summer 2018

- Implemented feature to add new metrics into large-scale data streaming platform for financial time series.
- Worked directly with end-users and developed software iteratively in a propriety language.

Johns Hopkins University Applied Physics Laboratory — Laurel, MD
Research Intern in Large-Scale Analytics Systems — Summer 2017

- Conducted sentiment and centrality analysis of Twitter communication network to identify problematic users.
- Implemented distributed clustering algorithm for categorical data using Apache Spark.

Preprints

[1] H. Helm, **R. Mehta**, B. Duderstadt, W. Yang, C. M. White, A. Geisa, J. T. Vogelstein, and C. E. Priebe, "A partition-based similarity for classification distributions", [arXiv link], 2020.

[2] J. T. Vogelstein, H. S. Helm, **R. Mehta**, J. Dey, W. LeVine, W. Yang, B. Tower, J. Larson, C. White, and C. E. Priebe, "A general approach to progressive learning", [arXiv link], 2020.

[3] **R. Mehta**, J. Chung, C. Shen, T. Xu, and J. T. Vogelstein, "Independence testing for multivariate time series", [arXiv link], 2019.

[4] **R. Mehta**, R. Guo, J. Arroyo, M. Powell, H. Helm, C. Shen, and J. T. Vogelstein, "Estimating information-theoretic quantities with uncertainty forests", [arXiv link], 2019.

[5] S. Panda, S. Palaniappan, J. Xiong, E. W. Bridgeford, **R. Mehta**, C. Shen, and J. T. Vogelstein, "Hyppo: A comprehensive multivariate hypothesis testing python package", [arXiv link], 2019.

[6] R. Perry, T. M. Tomita, **R. Mehta**, J. Arroyo, J. Patsolic, B. Falk, and J. T. Vogelstein, "Manifold forests: Closing the gap on neural networks", [arXiv link], 2019.

Teaching

University of Washington

- **Teaching Assistant** Fall 2020
  Statistical Methods in Engineering & Science (STAT 390)

John Hopkins University

- **Instructor** Winter 2020
  Mathematical Thinking and Proof-Writing for Engineers (EN.553.109)
- **Teaching Assistant** Fall 2019
  Matrix Analysis & Linear Algebra (EN.553.792)
- **Teaching Assistant** Spring 2019
  Probability & Statistics for the Biological Sciences & Engineering (EN.553.311)
- **Teaching Assistant** Fall 2018
  Probability & Statistics for the Physical Sciences & Engineering (EN.553.310)
- **Teaching Assistant** at Johns Hopkins University Spring 2018
  Computational Molecular Medicine (EN.553.450)

Skills

- **Proficient:** Python, R, MATLAB, Matplotlib, Seaborn, scikit-learn, joblib
- **Familiar:** Java, C/C++, Scala, PyTorch, Tensorflow, Keras, Apache Spark

Mentorship

- **Claire Gao** Fall 2020
  Linear Methods in Machine Learning (U. of Washington Dept. of Statistics Directed Reading Program)

Extracurricular Activities

- **Music Director** at Kranti A Capella Spring 2016–Spring 2018
  Wrote arrangements, led practices, and taught music theory as Music Director of South Asian fusion a capella group. Won "Best Arrangement" award at national competition Sangeet Saagar 2018.
- **Finance Education Chair & Alumni Chair** at Alpha Kappa Psi Spring 2016–Spring 2018
  Organized alumni networking events and curated education program in introductory finance for new members of professional business fraternity.