Ronak R. Mehta

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Education

University of Wisconsin-Madison *Madison, WI*
Computer Sciences, PhD *2014-Present*
Minor in Statistics
Computer Sciences, MS *2014-2016*

- Advisors: Vikas Singh and Michael Newton
- Research in Machine Learning and Computer Vision
- Fellow in the NIH/NLM T32 Bio-Data Science Predoctoral Training Program through the Biostatistics and Medical Informatics Department.
- Relevant Coursework: Artificial Intelligence, Advanced Machine Learning, Computer Vision, Statistical Inference, Linear and Nonlinear Optimization, Graphical Models, Stochastic Processes, Computational Statistics

University of Michigan-Ann Arbor *Ann Arbor, MI*
Computer Engineering, B.S.E. *2010-2014*

- Selected Coursework: Autonomous Robotics, Design of Microprocessor-based Systems, Embedded Control Systems, Design and Manufacturing, Control Systems Analysis and Design

Experience

Computer Sciences Department, UW-Madison *2015-Present*
Research Assistant and Fellow

- Collaborating with Vikas Singh and others on machine learning and computer vision projects, with applications directly involved in modeling preclinical development of Alzheimer's disease with the Wisconsin Alzheimer's Disease Research Center.

Computer Sciences Department, UW-Madison *Spring 2015*
CS 760: Machine Learning Teaching Assistant

- Developed and assigned written and programming homework assignments
- Held office hours and provided general teaching support.

EECS Department, UM-Ann Arbor *Spring 2014*
EECS 373: Embedded Systems Teaching Assistant

- Led laboratory sections and held lab office hours.
- Assisted students with lab assignments and course projects.

Continental Automotive Systems *Deer Park, IL Summer 2013*
Business Unit Transmission: Embedded Software Engineering Intern

- Developed an application to systematically test multiple features of a transmission control module in parallel asynchronously using NI LabView and NI bench-testing hardware.
- Identified known bugs from previous software releases through extended test runs.
- Gained extensive knowledge of automated testing and embedded software systems.

Publications

Finding Differentially Covarying Needles in a Temporally Evolving Haystack: A Scan Statistics Perspective
Ronak Mehta, Hyunwoo J. Kim, Shulei Wang, Sterling C. Johnson, Vikas Singh.
To appear in the Quarterly of Applied Mathematics, Special Issue 2018.
`https://arxiv.org/abs/1711.07575`

Orthogonalizing Tensor Trains Enables Scaling Recurrent Models to 3D Brain Image Sequences
Ronak Mehta, Rudrasis Chakraborty, Vikas Singh.
Under Review.

Resource Constrained Neural Network Architecture Search
Yunyang Xiong, Ronak Mehta, Vikas Singh.
Under Review.

Sampling-free Uncertainty Estimation in Gated Recurrent Units with Exponential Families
Seong Jae Hwang, Ronak Mehta, Vikas Singh.
Under Review. `https://arxiv.org/abs/1804.07351`

Provably Robust Image Deconvolution via Mirror Descent
Sathya Ravi, Ronak Mehta, Vikas Singh.
`https://arxiv.org/abs/1803.08137`

Talks and Presentations

CIBM Annual Retreat, 2018. Presented a short talk on Differentially Evolving Temporal Covariances at *Computation and Informatics in Biology and Medicine 2018 Annual Retreat*.
Diff-CVML, CVPR 2018. Presented a short talk and poster on Differentially Evolving Temporal Covariances at *Computer Vision and Pattern Recognition 2018*, at the *4th International Workshop on Differential Geometry in Computer Vision and Machine Learning*.
MCVW 2018. Presented a poster on Provably Robust Image Deconvolution via Mirror Descent at the *Midwest Computer Vision Workshop 2018*.
BMI Training Presentations Fall 2017. Presented work on measuring uncertainty in recurrent neural networks, with applications to neuroimaging for the Biostatistics and Medical Informatics Training Seminar.
AIRG Fall 2017. Presented and lead a discussion on variational inference for the AI Reading Group.
AIRG/EA Madison Fall 2017. Presented and lead a discussion on existential risk and AI Safety for AIRG and Effective Altruism Madison.
BMI Training Presentations Spring 2016. Presented final work on identifying second-order trends in high-dimensional temporal data for the BMI Training seminar.
AIRG Fall 2016. Presented and lead a discussion on stability and generalization.
BMI Training Presentations Fall 2016. Presented preliminary work on identifying second-order trends in high-dimensional temporal data for the BMI Training seminar.
AIRG Fall 2015. Presented and lead a discussion on the graphical lasso, and inverse covariance estimation.
AIRG Spring 2015. Presented and lead a discussion on Recurrent Neural Networks.

Reviewing Service

Medical Image Computing and Computer Assisted Intervention (MICCAI)	2018
(ad-hoc reviewer) International Conference in Machine Learning (ICML)	2018
(ad-hoc reviewer) Neural Information Processing Systems (NIPS)	2017