

Meet P. Vadera

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Education

2017-2022	University of Massachusetts Amherst	M.S. & Ph.D. (Computer Science)	GPA: 4.0/4.0
2012-2016	Indian Institute of Technology Gandhinagar	B.Tech. (Mechanical Engineering)*	GPA: 8.29/10

*Minor in Computer Science and Engineering.

Work Experience

Amazon - Alexa Smart Home

Applied Scientist

Sept '22- Present

- Building deep learning models that leverage multi-modal data streams from Alexa Smart Home devices and large language models to improve the performance of Alexa Hunches and Intelligent Control actions.

Amazon - Alexa Smart Home

Applied Scientist Intern

June '21- Aug '21

- Worked on developing uncertainty quantification based machine learning systems for activity recognition in the context of smart home.
- Leveraged implicit user feedback to personalize and improve smart home intelligent control.

IBM Research (MIT-IBM Watson AI Lab)

Research Intern

June '20- Sept '20

- Worked on loss-calibrated inference for Bayesian neural networks. The goal of the project was to improve decision-making on downstream tasks by correcting posterior distribution using decision-utility functions.
- Published a paper on the project at UAI '21, and filed a patent related to the invention.

Kronos Inc.

Data Science Intern

June '18- August '18

- Developed deep learning models to predict late-edit risk in time cards. This leads to significant time saving for managers involved in the time-keeping task due to automated sorting of high-edit-risk time cards.
- Worked on an independent R&D project to develop neural network based models for volume forecaster at parity with existing production models.

Innovaccer Inc.

Member of Technical Staff

June '16- July '17

- Designed the software architecture, and developed modules of Data Quality Tool and Healthcare measures computation as core modules for the company's platform. This helped clients build and run a large set of measures through a plug-and-play framework.

Publications

- **Vadera M.** Approximate Bayesian Deep Learning for Resource-Constrained Environments. *Doctoral Dissertation (2022)*
- **Vadera M.**, Samplawski C., and Marlin B. URSABench: Comprehensive Benchmarking of Approximate Bayesian Inference Methods for Deep Neural Networks. In *Computer Vision–ECCV Workshops (2022)*
- **Vadera M.**, Cobb A., Li, J., Jalaian B., Abdelzaher T., and Marlin B. URSABench: Comprehensive Benchmarking of Approximate Bayesian Inference Methods for Deep Neural Networks. In *MLSys (2022)*
- **Vadera M.**, Ghosh S., Ng K., and Marlin, B. Post-hoc loss-calibration for Bayesian neural networks. In *UAI (2021)*
- **Vadera M.**, Jalaian B., and Marlin, B. Generalized Bayesian Posterior Expectation Distillation for Deep Neural Networks. In *UAI (2020)*
- **Vadera M.**, Cobb A., Jalaian B., and Marlin B. URSABench: Comprehensive Benchmarking of Approximate Bayesian Inference Methods for Deep Neural Networks. In *ICML Workshop on Uncertainty & Robustness in Deep Learning (2020)*

- **Vadera M.**, Shukla S., Jalaian B., and Marlin B. Assessing the Adversarial Robustness of Monte Carlo and Distillation Methods for Deep Bayesian Neural Network Classification. In *AAAI Workshop on SafeAI (2020)*
- **Vadera M.**, and Marlin, B. Investigating Fusion-Based Deep Learning Architectures for Smoking Puff Detection. In *IEEE/ACM CHASE (2019)* (Poster Paper)
- Holtsclaw C., **Vadera M.**, and Marlin, B. Towards Joint Segmentation and Active Learning for Block-Structured Data Streams. In *KDD Workshop on Data Collection, Curation, and Labeling (DCCL) for Mining and Learning (2019)* (Best Paper Award)
- **Vadera M.**, and Marlin, B. Assessing the Robustness of Bayesian Dark Knowledge to Posterior Uncertainty. In *ICML Workshop on Uncertainty & Robustness in Deep Learning (2019)*
- Singh, G., **Vadera, M.**, Samavedham, L., and Lim, E. C. H.. Multi-Class Diagnosis of Neurodegenerative Diseases: A Neuroimaging Machine Learning based Approach. In *Industrial & Engineering Chemistry Research (2019)*.
- Singh, G., **Vadera, M.**, Samavedham, L., Lim, E.C.H.. Machine Learning Based Framework for Multi-Class Diagnosis of Neurodegenerative Disease: A Study on Parkinson Disease, in the *11th IFAC Symposium on Dynamics and Control of Process Systems, including Biosystems*, Trondheim, Norway. June 6-8, 2016.

Patent Applications

- **Meet Prakash Vadera**, Uri Kartoun, Soumya Ghosh, Kenney Ng. POST-HOC LOSS-CALIBRATION FOR BAYESIAN NEURAL NETWORKS. Date filed: 05/11/2021, Publication date: 12/22/2022.
- Hongyang Wang, Amir Salimi, Sara Hillenmeyer, **Meet Prakash Vadera**, Sunny Singh, Arpit Jain, Chandra Prakash Konkimalla, Yishuai Li, Marc Wetter, William Welbourne, Charles Brett, George Strajan, Rajesh Bangaru Ravindranath, Siyuan Liu. DEVICE CONTROL USING NEAR REAL TIME MODELING. Date filed: 03/28/2022.

Technical Skills

Python, Scala, C, MATLAB, R, PyTorch, Keras, Weka, Apache Spark, MySQL, Elasticsearch, MongoDB

Awards

- NSF travel award to attend IEEE/ACM CHASE '19.
- Best paper award at KDD '19 Workshop on Data Collection, Curation, and Labeling (DCCL) for Mining and Learning.
- Top reviewer for UAI '23, UAI '22 and NeurIPS '22.

Service to the Profession

Reviewer for UAI '21, ICML '22, UAI '22, NeurIPS '22, MLSys '23, UAI '23, NeurIPS '23, ACM MultiMedia '23, ICCV Workshop on Uncertainty in Computer Vision '23, Journal of Machine Learning Research, IEEE Transactions on Multimedia, and Elsevier Journal on Signal Processing: Image Communication.