KATE LASSITER

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EDUCATION

Columbia University New York, NY
Master of Science in Data Science 3.63/4.0 - Expected Dec 2024
Bayesian Machine Learning, Natural Language Processing, Deep Learning Systems Performance, Computer Systems, Algorithms

University of Massachusetts Amherst Amherst, MA
Bachelor of Science in Applied Economics, IT minor 3.84/4.0 - May 2019
Awards: Recipient of William F. Field Merit Scholarship and Phi Beta Kappa Honor Society

WORK EXPERIENCE

Federal Reserve Board of Governors Washington, D.C
Vice Chairman's Research Assistant/Senior Research Assistant - Short Term Funding Markets Jul 2019 - Jul 2022

- Led statistical analysis which set guidelines for two emergency facilities to ease market volatility during the Covid-19 pandemic
- Selected in the top 3% of research assistants to serve Vice Chairman Richard Clarida after creating a novel data visualization software to automate 1,000s of hours of work across divisions
- Modeled 1TB of data to predict bond returns quickly with sparse matrices, distributed computing, and QR decomposition. Automated with an ETL to run daily at market close using SQL, R, and cron in Linux
- Forecasted time series data, built and maintained big data pipelines in Python, R, SQL, SAS

DATA SCIENCE PROJECTS

Columbia University, Variational Bayesian Inference for Unsupervised Clustering Oct 2023 - Nov 2023

- Solved and released the first publicly available full mathematical derivation of a binomial mixture model given beta and Dirichlet priors using variational inference, including the exact evidence lower bound (ELBO) https://medium.com
- Implemented in PyTorch to speed matrix multiplication in fast, closed-form parameter update equations versus automatic differentiation and MCMC methods common in popular packages like PyMC and BayesPy

Columbia University, Deep Learning for Computer Vision Feb 2023 - Apr 2023

- Developed a space optimized CNN through weight pruning and quantization in Vertex AI on Google Cloud Platform (GCP)
- Deployed an 80% smaller TensorFlow Lite model for edge devices with comparable accuracy on image classification
- Used synchronous distributed training and half precision matrix multiplications to improve speed efficiency by 60%

TECHNICAL SKILLS

- Focus Areas: Deep Learning, Time Series Modeling, Distributed Computing, Variational Bayes, Dimensionality Reduction
- Programming Languages: Python | R | SQL | SAS
- Deep Learning Frameworks: PyTorch, Keras, TensorFlow
- Big Data Tech Stack: Spark, Hadoop, Google Cloud Dataproc, Vertex AI

PUBLICATIONS

Federal Reserve Board of Governors Washington D.C.
Vice Chairman Clarida, **Sr. Research Assistant Kate Lassiter**, Special Advisor Chiara Scotti, et. all May 2021 - Jan 2022
"The Federal Reserve's New Framework: Context and Consequences" (2022) | https://doi.org/10.17016/FEDS.2022.001

Exploring the Fed's strategy to tackle inflation by raising the federal funds rate in the midst of an unprecedented pandemic