Luhuan Wu

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Education

Columbia University — New York, NY, USA
Ph.D. in Statistics. Advisor: John Cunningham and David Blei — 2020 - Current
M.S. in Data Science — 2018 - 2020

Nanjing University — Nanjing, Jiangsu, China
B.S. in Mathematics — 2014 - 2018

Research Interests

My main research interest is probabilistic machine learning, with a primary focus on deep generative models, latent variable models, approximate inference methods, and uncertainty quantification.

Publications

1. Posterior Uncertainty Quantification in Neural Networks using Data Augmentation. In *AISTATS*, 2024
   Luhuan Wu, Sinead Williamson

2. Practical and Asymptotically Exact Conditional Sampling in Diffusion Models. In *NeurIPS*, 2023
   Luhuan Wu*, Brian L. Trippe*, John P. Cunningham, and David Blei

3. Variational Nearest Neighbor Gaussian Processes. In *ICML*, 2022.
   Luhuan Wu, Geoff Pleiss, and John P. Cunningham

4. Bias-free Scalable Gaussian Processes via Randomized Truncations. In *ICML*, 2021
   Andres Potapczynski*, **Luhuan Wu***, Dan Biderman*, Geoff Pleiss, and John P. Cunningham

5. Hierarchical Inducing Point Gaussian Process for Inter-domian Observations. In *AISTATS*, 2021
   Luhuan Wu*, Andrew Miller*, Lauren Anderson, Geoff Pleiss, David Blei, and John P. Cunningham

6. Variational Objectives for Markovian Dynamics with Backward Simulation In *ECAI*, 2021
   Antonio Khalil Moretti*, Zizhao Wang*, **Luhuan Wu***, Iddo Drori, Itsik Pe'er

Industry experience

Apple AIML, Research Intern — Seattle, WA, USA
Advisor: Sinead Williamson — Summer 2023

Conduct research on uncertainty estimation methods for deep learning models using Bayesian non-parametrics and data augmentation techniques;
The proposed method outperforms existing methods in uncertainty calibration and out-of-distribution robustness tasks.

Skills

Programming: Python (PyTorch), R, Matlab, LaTeX