Alisa Sheinkman

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Profile

Final year PhD researcher developing advances in probabilistic machine learning with big data and deep models in mind. My research adopts a Bayesian view on modern deep modelling, studies arising challenges and proposes possible solutions with interpretability, reliability and uncertainty quantification in mind. Namely, I study efficient inference schemes with a focus on scalable variational inference algorithms such as stochastic and black box variational inference; My work addresses the challenge of architecture specification of Bayesian neural networks, Bayesian model choice and model combination in the realms of big data and overparametrized deep models.

Education

Ph.D. in Mathematics, University of Edinburgh, Edinburgh, UK 2020 - Now
Research focus on Bayesian deep learning.
The thesis studies efficient inference schemes such as stochastic and black box variational inference and the specification of the architecture of neural networks, Bayesian model selection and combination. The research output is a novel class of Bayesian neural networks and a corresponding variational inference algorithm which together address the challenge of model choice, and improve the accuracy and calibration.

MASt in Mathematical Statistics (Merit), University of Cambridge, Cambridge, UK 2019 - 2020
Average mark of 71.0% with essay mark of 87.0%.

Bachelor of Mathematics (First Class Honours), NRU HSE, Moscow, Russia 2015 - 2019
GPA 9.34 out of 10.

Experience

Researcher, Alan Turing Institute Data Study Group, London, UK 2022
Intensive hackathon which developed and tested deep learning models for predicting the perception of various urban noises. The output is a publication at the Journal of the Acoustical Society of America.

Market analyst, Nielsen IQ, Moscow, Russia 2021
Provided analysis of Nielsen Retail Measurement Data and presented results helping to answer client's business questions.

Research intern, NRU HSE, Moscow, Russia 2018-2019
Developed advances on braid groups and quantum matrix algebras in the international laboratory Of representation theory and mathematical physics.

Skills

Technical Skills	Python with Numpy/SciPy, JAX, pandas, scikit-learn, NumPyro, Pytorch; Git and GitHub; LaTeX.
Soft Skills	Critical thinking, emotional intelligence, time management.
Languages	English (C2, full proficiency), Russian (native), French (beginner)

Publications

1. **A.Sheinkman**, S.Wade, The Architecture and Evaluation of Bayesian Neural Networks, arXiv preprint, arXiv:2503.11808, 2025.
2. **A.Sheinkman**, S.Wade, Variational Bayesian Bow tie Neural Networks with Shrinkage, arXiv preprint, arXiv:2411.11132, 2024.

3. A.Mitchell, E.Brown, R.Deo, Y.Hou, J.Kirton-Wingate, J.Liang, **A.Sheinkman**, C.Soelistyo, H.Sood, K.Xing, A.Wongprommoon,W.Yip, F.Aletta, Deep learning techniques for noise annoyance detection: Results from an intensive workshop at the Alan Turing Institute, the Journal of the Acoustical Society of America 153, A262-A262, 2023.

Scholarships and grants

ProbAI Hub Doctoral Prize Fellowship, selected for the final round of interviews, not awarded, 2025.

Dr Laura Wisewell Fund scholarship, £1,000, 2024.

ISBA (International Society for Bayesian Analysis) junior travel award, 400$, 2024.

LMS (London Mathematical Society) early career research grant, £450, 2024.

Talks

CMStatistics (Conference on Computational and Methodological Statistics), London, UK, 2024.

ISBA (International Society for Bayesian Analysis) world meeting, Venice, Italy 2024.

BAYSM (Bayesian Young Statisticians Meeting), Venice, Italy, 2024.

Early Career Researches Day of the Centre for Statistics Annual Conference at the University of Edinburgh, Edinburgh, UK, 2024.

Teaching

Fundamentals of Probability, Intro to Dynamical Systems, Probability and Statistics TA, 2022-2025.
Lead tutorials and marked exams.

Honours Algebra, Calculus and Applications, Proofs and Problems TA at the University of Edinburgh, 2021-2022.
Provided example classes and workshops, and marked assignments.

Calculus TA at the NRU HSE, 2024.

Miscellaneous

OVD-info volunteer (human rights defence and media group);
Boxing (2021 - now), professional figure skating (did 2002-2014).