

# Alisa Sheinkman

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## Profile

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Researcher seeking opportunities to advance **probabilistic machine learning** and, more broadly, **artificial intelligence** in the age of big data and ever-expanding models. My current research focuses on Bayesian **deep learning** and **scalable inference algorithms** and addresses arising challenges with interpretability, reliability and **uncertainty quantification** in mind.

## Education

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**University of Edinburgh**, Edinburgh, UK 2020 - 2025

**Ph.D. in Statistics (Pass with Minor Corrections)**

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**, **calibration** and **reliability of uncertainty quantification** which is especially crucial in **safety-critical applications**.

**University of Cambridge**, Cambridge, UK 2019 - 2020

**MASt in Mathematical Statistics (Merit)**

Average mark of 71.0% with essay mark of 87.0%.

**National Research University Higher School of Economics**, Moscow, Russia 2015 - 2019

**Bachelor of Mathematics (First Class Honours)**

**GPA 9.34** out of 10.

## Experience

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**Graduate Teaching Assistant, King's College London**, London, UK 2022-2025

Led tutorials, marked assignments and exams on Fundamentals of Probability, Intro to Dynamical Systems, and Probability and Statistics.

**Market analyst, Nielsen IQ**, Moscow, Russia 2021

Analysed Nielsen Retail Measurement Data to identify market trends, providing data-driven insights that informed strategic business decisions.

**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

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**Technical Skills** Python with Numpy/SciPy, JAX, pandas, scikit-learn, NumPyro, Pytorch; Transformers, Git, GitHub;  $\text{\LaTeX}$ .

**Soft Skills** Critical thinking, emotional intelligence, time management.

**Languages** English (C2, full proficiency), Russian (native), French (beginner).

## Publications

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1. E. Semenova, **A.Sheinkman**, T. J. Hitge, S.M.Hall, J.Cockayne, *SMRS: advocating a unified reporting standard for surrogate models in the artificial intelligence era*, arXiv preprint, arXiv:2502.06753, 2025.
2. **A.Sheinkman**, S.Wade, *Understanding the Trade-offs in Accuracy and Uncertainty Quantification: Architecture and Inference Choices in Bayesian Neural Networks*, in Proceedings of the ECML PKDD, 2025 (to appear).
3. **A.Sheinkman**, S.Wade, *Variational Bayesian Bow tie Neural Networks with Shrinkage*, arXiv preprint, arXiv:2411.11132, 2024.
4. 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.

## Talks

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ECML-PKDD (European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases), Porto, Portugal, 2025.

The first workshop on Advances in post-Bayesian methods, London, UK, 2025.

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.

## Scholarships and grants

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Travel support grant for the First workshop on Advances of post-Bayesian methods, £250, 2025.

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.

## Miscellaneous

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OVD-info volunteer (human rights defence and media group);

Sports: boxing (2021 - now), professional figure skating (did 2002-2014).