Katarzyna Kobalczyk

Contact Information

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Education

University of Cambridge Cambridge, United Kingdom — Oct. 2023 - Jun. 2027 (expected)
PhD in Applied Mathematics and Theoretical Physics
Supervisor: Prof. Mihaela van der Schaar

University of Cambridge Cambridge, United Kingdom — Oct. 2022 - Jun. 2023
MASt in Mathematical Statistics (a.k.a. Part III)
Essay: *Meta-learning for multimodal task distributions*; supervisor: Prof. Sergio Bacallado

University of Warwick Coventry, United Kingdom — Sep. 2019 - Jul. 2022
BSc in Mathematics and Statistics, First Class Honours
Ranked 1st in the Statistics student cohort; 92.5%, 89.3%, 89.4% yearly grade averages

Awards

Warwick Statistics Prize — Jul. 2022
Awarded for the best overall performance in the Mathematics and Statistics degree.

Institute of Mathematics and its Applications (IMA) Prize — Jul. 2022
Awarded to a single student in the Department of Statistics for an outstanding performance in mathematics-oriented subjects.

Outstanding Academic Excellence Prize — Jul. 2021
Awarded for the best 2nd year examination results in the Department of Statistics.

Research Experience

University of Cambridge, van der Schaar Lab
Conducted research on
- Meta-learning for few-shot learning with heterogenous tabular data
- Bayesian methods for understanding human decision-making and knowledge acquisition.

Warwick Statistics, Student researcher — Oct. 2021 - Nov. 2022
Developed a Python package for Bayesian inference with Chain Event Graphs.

Warwick Statistics, Undergraduate Research Support Scheme — Aug. - Oct. 2021
Studied probabilistic graphical models; supervisor: Prof. J. L. Hutton.

Work Experience

Citadel, London, United Kingdom — Jun. - Sep. 2023 (expected)
Quantitative Research Intern

G-Research, London, United Kingdom — Jun. - Sep. 2022
Summer Research Intern
- Change-point and anomaly detection in high-dimensional time series data for quantitative trading applications

Schroders, London, United Kingdom — Jul. - Aug. 2021
Data Insights Unit Intern
- Bayesian item-response theory for the analysis of employee surveys
- Explainability and error sensitivity research in mean-variance portfolio optimisation

Royal Dutch Shell, Cracow, Poland — Dec. 2020 - Jan. 2021
Off-cycle Data Science Associate
- Clustering analysis and decision tree learning for customer segmentation

Data Science Intern — Jul. - Sep. 2020
- Modelling and analysis of traffic data with spatio-temporal networks
- Collaborative work on an automated fraud detection system based on machine learning methods for anomaly detection.

Software & Projects

`cegpy`—Python package for Bayesian inference with Chain Event Graphs.

`onlineoceanarium`—R package collecting examples of streaming algorithms for machine learning, statistics, and online decision-making.

`MonteCarloCasino`—self-contained notebooks showcasing a range of Monte Carlo sampling methods implemented in Julia.

`mystatlearn`—educational Python package for statistical learning and non-parametric statistics inspired by *The Elements of Statistical Learning* (Hastie et al. 2009).

Academic Engagement

Warwick Data Science Society — Apr. 2021 - Apr. 2022
Research Lead
- Organised and supervised student-led interdisciplinary data science projects; edited and published the results on WDSS's research blog.
- Led weekly *Papers & Code Club* reading group.

Education Officer — Sep. 2020 - Apr. 2021
- Managed and developed online coding courses and data science workshops.

Warwick Department of Statistics — Aug. - Oct. 2021
Statistics Education Project Officer
- Typeset lecture notes and exercise sheets for undergraduate courses in Statistics.

Student Staff Liaison Committee — Sep. 2021 - Jul. 2022
- Discussed ideas about teaching and student support with the University staff.

Technical Skills

Languages: Python, R, Stan, Julia, MATLAB, SQL, Bash
Libraries: Scipy stack, PyTorch, TensorFlow, JAX, NetworkX, PySpark
Tools: Git, Conda, Docker