Katarzyna (Kasia) Kobalczyk

knk25@cam.ac.uk | kasia-kobalczyk.github.io | github.com/kasia-kobalczyk
Trinity College, CB2 1TQ Cambridge, UK

PhD student in the ML and AI lab of Prof. Mihaela van der Schaar at the University of Cambridge.
Research interests: probabilistic machine learning, meta-learning, sample-efficient decision-making, foundational models.

EDUCATION

UNIVERSITY OF CAMBRIDGE PhD in Applied Mathematics and Theoretical Physics
2023 - 2027 (Expected) | Cambridge, UK
Research in the ML and AI lab of Prof. Mihaela van der Schaar

UNIVERSITY OF CAMBRIDGE MASt in Mathematical Statistics
2022 - 2023 | Cambridge, UK | Grade: Honours with Merit
Part III essay titled: *Meta-learning for multimodal task distributions* , supervised by Prof. Sergio Bacallado

UNIVERSITY OF WARWICK BSc in Mathematics and Statistics
2019 - 2022 | Coventry, UK | Grade: First Class Honours
Ranked 1st in the Statistics student cohort; 92.5%, 89.3%, 89.4% yearly grade averages

AWARDS

Warwick Statistics Prize | 2023
Awarded for the best overall performance in the Mathematics and Statistics degree

Institute of Mathematics and its Applications (IMA) Prize | 2023
Awarded for an outstanding performance in mathematics-oriented subjects

Outstanding Academic Excellence Prize | 2022
Awarded for the best 2nd year examination results in the Department of Statistics

WORK EXPERIENCE

CITADEL Quantitative Research Intern
Summer 2023 | London, UK
- Developing and back-testing quantitative trading strategies for index rebalance
- Portfolio optimization with conic programming

G-RESEARCH Summer Research Intern
Summer 2022 | London, UK
- Change-point analysis and anomaly detection for high-dimensional time-series data

SCHRODERS Data Insights Unit Intern
Summer 2021 | London, UK
- Application of Bayesian item-response theory to survey data analysis
- Explainability and error sensitivity research in mean-variance portfolio optimisation

SHELL PLC Data Science Intern
Summer & Winter 2020 | Krakow, Poland
- Clustering analysis and decision tree learning for customer segmentation
- Modelling and analysis of traffic data with spatio-temporal networks
- Machine learning for fraud detection

PUBLICATIONS

- **Kobalczyk**, K., & van der Schaar, M. (2024). *Informed Meta-Learning* . ICML 2024 SPIGM and MFHAIA workshops. https://arxiv.org/abs/2402.16105v4
- Walley, G., Shenvi, A., Strong, P., & **Kobalczyk**, K. (2023). *cegpy: Modelling with chain event graphs in Python* . Knowledge-Based Systems, 274, 110615. https://doi.org/10.1016/j.knosys.2023.110615

Pre-prints and under review:

- **Kobalczyk**, K., Fanconi, C., Sun, H., & van der Schaar, M. (2024). *Towards Few-shot Steerable Alignment* [under review]. Submitted to The 28th International Conference on Artificial Intelligence and Statistics (AISTATS)
- **Kobalczyk**, K., Astorga, N., & van der Schaar, M. (2024). *Active Task Disambiguation with LLMs* [under review]. Submitted to The Thirteenth International Conference on Learning Representations
- Pouplin, T., **Kobalczyk**, K., & van der Schaar, M. (2024). *LLMs for Generalizable Language-Conditioned Policy Learning under Minimal Data Requirements* [under review]. Submitted to The Thirteenth International Conference on Learning Representations
- Zhu, M., **Kobalczyk**, K., Petrovic, A., Nikolic, M., van der Schaar, M., Delibasic, B., & Lio, P. (2023). *Tabular Few-Shot Generalization Across Heterogeneous Feature Spaces* . https://arxiv.org/abs/2311.10051

SKILLS

PROGRAMMING LANGUAGES

Proficient: Python
Intermediate: R
Basic: Stan, SQL, Bash, Matlab

FRAMEWORKS & SOFTWARE

PyTorch, Hugging Face, Scikit-learn,
Weights & Biases, Hydra,
Git, Conda, Docker, JAX

SPOKEN LANGUAGES

Native fluency: English, Polish
Intermediate: German