

Katarzyna (Kasia) Kobalczyk

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📍 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: large language models, probabilistic machine learning, meta-learning, sample-efficient decision-making,

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.

WORK EXPERIENCE

META MACHINE LEARNING RESEARCH SCIENTIST INTERN

Summer 2024 | Menlo Park, CA, United States

- Internship with the Adaptive Experimentation Team with a focus on Bayesian Optimisation.

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

1. **Kobalczyk, K.**, & van der Schaar, M. (2025a). *Preference Learning for AI Alignment: a Causal Perspective*. Forty-Second International Conference on Machine Learning
2. Pouplin*, T., **Kobalczyk** *, K., & van der Schaar, M. (2025). *LLMs for Generalizable Language-Conditioned Policy Learning under Minimal Data Requirements*. Forty-Second International Conference on Machine Learning. <https://arxiv.org/abs/2412.06877> [Spotlight]

3. **Kobalczyk**, K., & van der Schaar, M. (2025b). *Towards Automated Knowledge Integration From Human-Interpretable Representations*. The Thirteenth International Conference on Learning Representations. <https://openreview.net/forum?id=NTHMw8S1Ow> [**Spotlight**]
4. **Kobalczyk** *, K., Astorga *, N., & van der Schaar, M. (2025). *Active Task Disambiguation with LLMs*. The Thirteenth International Conference on Learning Representations. <https://openreview.net/forum?id=JAMxRSXLfz> [**Spotlight**]
5. **Kobalczyk**, K., & van der Schaar, M. (2024). *Informed Meta-Learning*. ICML 2024 SPIGM and MFHAIA workshops. <https://arxiv.org/abs/2402.16105v4>
6. 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:

1. **Kobalczyk** *, K., Fanconi *, C., Sun, H., & van der Schaar, M. (2024). *Few-shot Steerable Alignment*
2. 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>

* Equal contribution.

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

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