

Maksym Tretiakov

Email: maxtretiakov37@gmail.com

Education

Ludwig-Maximilian University of Munich

Ph.D. in Statistics

03/2026 – Current

- Working on probabilistic machine learning topics under the supervision of Professor David Rügamer, Professor Vincent Fortuin, and Doctor James Odgers.

Technical University of Munich

Master's Degree in Mathematics in Data Science

04/2022 – 07/2024

- Awarded the DAAD Master Scholarship for academic performance and research potential.

Igor Sikorsky Kyiv Polytechnic Institute

Bachelor of Science in System Analysis

09/2017 – 06/2021

- Received a merit-based scholarship for academic excellence, ranking in the top 15% of students.

Publications, preprints

- **Amortized Structured Stochastic Variational Inference for Gaussian Process Latent Variable Models (2026)**

Submitted NeurIPS 2026

Authors: Maksym Tretiakov, Sarah Filippi, Vincent Fortuin, Ruth Misener, Ruby Sedgwick, James Odgers

- **PAC Bayes Bounds Evaluation Framework (2025)**

PDF Link: github.com/fortuinlab/pacbb/blob/main/doc/pacbb.pdf

Authors: Yauheni Mardan, Maksym Tretiakov, Alexander Immer, Vincent Fortuin

- **A new atlas to study embryonic cell types in Xenopus (2024)**

Developmental Biology Journal

Authors: Kseniya Petrova, Maksym Tretiakov, Aleksandr Kotov, Anne H. Monsoro-Burq, Leonid Peshkin

Experience

Scalable Capital

Quantitative Developer

01/2024 – Current

- Worked on convex optimization methods for portfolio rebalancing and factor model hedging.
- Researched and developed factor models for Value-at-Risk (VaR) estimates to support intra-day and end-of-day risk monitoring.
- Worked on machine learning models for predicting limit order execution probability.

Helmholtz.AI (ELPIS Lab)

Research Project (Supervisors: Dr. James Odgers, Professor Vincent Fortuin)

04/2025 – Current

- Developed, as part of a collaborative research project, a Structured Stochastic Variational Inference method for Gaussian Process Latent Variable Models (GP-LVMs), addressing limitations of mean-field variational approximations in uncertainty estimation.
- Derived a structured variational objective and systematically evaluated uncertainty estimates relative to mean-field baselines within an end-to-end PyTorch framework with sparse GP inference and stochastic optimization.

Harvard Medical School (Kirschner Lab)

Research Project (Supervisor: Dr. Leon Peshkin)

10/2022 – 07/2024

- Implemented machine learning methods for single-cell transcriptomics, applying clustering (Leiden) and classification (kNN, marker-based) algorithms for cell type annotation in the new Xenopus atlas.
- Built scalable pipelines for unbiased cell type assignment and validation, contributing to a peer-reviewed publication in Developmental Biology (2024).

Institute of Mathematics of National Academy of Sciences of Ukraine

Research Project (Supervisor: Professor Andrey Pilipenko)

11/2020 – 05/2021

- Developed and compared Hidden Markov Models and deep learning methods (RNN, LSTM) for automatic chord recognition in music.
- Implemented audio preprocessing pipelines (Fourier, HPS, CQT transforms) and evaluated models on real-world song datasets.

Languages

- English (fluent)
- Russian (native)
- Ukrainian (native)