

Emil Javůrek

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EDUCATION

Ludwig-Maximilians-Universität München

Dec 2024 — present

PhD in Computer Science, supervised by Prof. Dr. Stefan Feuerriegel

Research focus: *Causal ML · Foundation Models & In-Context Learning (PFNs) · Bayesian & Amortized Inference*

- Pretraining transformer-based foundation models (prior-data fitted networks) from scratch in PyTorch for amortized in-context inference: designing synthetic data-generating priors, sampling $\sim 10^9$ training examples, and training multi-day runs on a local A100/H200 cluster.
- Developing theory and estimators for causal inference under model misspecification and unobserved confounding, spanning generalized-Bayes posteriors, orthogonal learners, and sensitivity analysis; 3 first-author papers.

Publications ([Google Scholar](#)):

- *Foundation Models for Causal Inference via Prior-Data Fitted Networks (CausalFM)*, [arXiv:2506.10914](#) (co-author, **ICLR 2026**)
- *An Orthogonal Learner for Individualized Outcomes in Markov Decision Processes*, [arXiv:2509.26429](#) (**first author**, **ICLR 2026**)
- *Amortizing Causal Sensitivity Analysis via Prior-Data Fitted Networks*, [arXiv:2605.10590](#) (**first author**)
- *Generalized Bayes for Causal Inference*, [arXiv:2603.03035](#) (**first author**)
- *Rank-Learner: Orthogonal Ranking of Treatment Effects*, [arXiv:2602.03517](#) (co-author, **ICML 2026**)
- *Adaptive Experimentation for Censored Survival Outcomes*, [arXiv:2605.18459](#) (co-author)
- *Targeted Synthetic Control Method*, [arXiv:2602.04611](#) (co-author)

University of Oxford, Linacre College

Sep 2023 — Sep 2024

MSc Statistics (Distinction)

- **Relevant Modules:** Advanced Machine Learning, Bayes Methods, Advanced Simulation Methods, Computational Statistics, Statistical Programming, Applied Statistics, Statistical Inference
- **Dissertation:** Modern Variational Bayes with Flow Matching, supervised by Prof. Geoff Nicholls

University of Amsterdam

Oct 2020 — Jul 2023

BSc Econometrics (GPA 8.52, top 5%)

- **Relevant Modules:** Statistical Learning, Time Series Analysis, Optimization & Algorithms and Data Structures
- **BSc Dissertation:** Simulation Based Evaluation of Vaccination Strategies in Epidemics with Mutating Infectivity on Watts-Strogatz Graphs (2nd best in the year)

EXPERIENCE

Creator Fund, Venture Fellow (2025/26 Cohort)

Remote, Oct 2025 — Feb 2026

- Selected to a competitive, PhD-run European deep-tech VC (~40 fellows/cohort; \$56M fund) investing at pre-seed across AI, robotics, and physics; completed the investor-side curriculum and evaluated early-stage AI/ML startups on founder calls, with inside exposure to venture diligence and investment decisions.

Quantum Dice, Simulation Research Intern

Oxford, Feb 2024 — Oct 2024

- Sole in-house statistician at a quantum-hardware startup building a quantum random number generator (QRNG): owned statistical rigor across the company, advising other teams on experiment design and hypothesis testing.
- Designed and ran large-scale Monte Carlo experiments in Python (Value-at-Risk, Black-Scholes option pricing; order 10^9 - 10^{10} sampled paths across tens of thousands of batches) to rigorously benchmark quantum vs. pseudo-random RNGs.
- Validated QRNG output for statistical randomness using the NIST SP 800-22 test suite; conducted work with institutional partners (HSBC, Hartree Centre).

University of Amsterdam, Teaching Assistant

Amsterdam, Sep 2022 — Dec 2022

- Taught tutorials for courses Mathematics 1: Calculus and Probability Theory and Statistics 1.

AWARDS

- **Konrad Zuse School of Excellence in Reliable AI:** Affiliate PhD Scholarship
- **Prize of the Czech National Bank and Czech Insurance Association Prize** (2019)
- **Czech Economics National Olympiad:** 3rd National, 7th International (2019)
- **Princeton University:** Full Scholarship by Czech Center for Talented Minds for a summer course (2017)

TALKS & SERVICE

- Invited talks on foundation models for causal inference: **Instacart** (2025), **HSBC** (2026), **SAP** (2026), relAI Seminar (2026), MCML Causal ML Workshop (2025)
- Gold Reviewer ICML 2026, Reviewer TMLR

SKILLS AND INTERESTS

- **Programming:** Python, R, SQL, Git, LaTeX
- **ML:** PyTorch, transformers, PFNs, normalizing flows & flow matching, variational & Bayesian inference
- **Numerical:** Monte Carlo methods, hypothesis testing, optimization
- **Languages:** English (Fluent), Czech (Native), German (Intermediate)
- **Interests:** Rock Climbing, Cycling