

Tobias Freidling

✉ tobias.freidling@epfl.ch

🌐 <https://tobias-freidling.onrender.com/>

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Academic Positions

2025 – present **Postdoctoral Researcher**, École Polytechnique Fédérale de Lausanne, Switzerland.
Supervisor: Mats Stensrud

Education

2020 – 2024 **PhD Mathematics of Information**, University of Cambridge, UK.
Thesis: *Some Selective Inference and Optimization Methods for Reliable Causal Inference*
Supervisor: Qingyuan Zhao

2020 **Exchange Research Student, Informatics**, Kyoto University, Japan.
Supervisor: Makoto Yamada

2018 – 2020 **M.Sc. Mathematics**, Technical University of Munich, Germany.
Thesis: *Model uncertainty in statistical inference*
Supervisor: Mathias Drton

2017 – 2018 **Visiting Student, The Queen's College**, University of Oxford, UK.

2015 – 2017 **B.Sc. Mathematics**, Ludwig-Maximilians University, Munich, Germany.
Thesis: *The proof of the Birkhoff Ergodic Theorem*
Supervisor: Peter Müller

2014 – 2015 **B.Sc. Mathematics**, Technical University of Munich, Germany.

Publications

- 1 **Freidling, Tobias** (2026). “Randomization Inference with Concentration Inequalities”. In: *arXiv:2609.18586*. 🌐 URL: <https://arxiv.org/abs/2609.18586>.
- 2 **Freidling, Tobias** and Marco Piccininni (2026). “The Cornfield Condition and Principle: A Critical Appraisal”. In: *Observational Studies* 12.2, pp. 179–192. 🌐 URL: <https://muse.jhu.edu/pub/56/article/999744>.
- 3 **Freidling, Tobias** and Qingyuan Zhao (2026). “Optimization-Based Sensitivity Analysis for Unmeasured Confounding Using Partial Correlations”. In: *Journal of Computational and Graphical Statistics* 35.2, pp. 902–912. 🌐 URL: <https://doi.org/10.1080/10618600.2025.2573156>.
- 4 **Freidling, Tobias**, Qingyuan Zhao, and Zijun Gao (2026). “Selective Randomization Inference for Adaptive Experiments”. In: *Journal of the Royal Statistical Society Series B: Statistical Methodology*, qkago81. 🌐 URL: <https://doi.org/10.1093/jrsssb/qkago81>.
- 5 Scauda, Martina, **Tobias Freidling**, and Qingyuan Zhao (2026). “Counterfactual Optimization of Policy Interventions: Lexical Ordering and Leapfrogging”. In: *arXiv:2608.20505*. 🌐 URL: <https://arxiv.org/abs/2608.20505>.
- 6 **Freidling, Tobias**, Benjamin Poignard, Héctor Climente-González, and Makoto Yamada (2021). “Post-selection inference with HSIC-Lasso”. In: *International Conference on Machine Learning (ICML)*. Vol. 139, pp. 3439–3448. 🌐 URL: <https://proceedings.mlr.press/v139/freidling21a.html>.
- 7 Strieder, David, **Tobias Freidling**, Stefan Haffner, and Mathias Drton (2021). “Confidence in causal discovery with linear causal models”. In: *Uncertainty in Artificial Intelligence (UAI)*. Vol. 161, pp. 1217–1226. 🌐 URL: <https://proceedings.mlr.press/v161/strieder21a.html>.

Presentations and Talks

2026	Selective Inference Workshop at Indian Business School, Hyderabad, India RSS International Conference, Bournemouth, UK IMS Annual Meeting, Salzburg, Austria European Causal Inference Meeting (EuroCIM), Oxford, UK
2025	IMS International Conference on Statistics and Data Science (ICSIDS), Seville, Spain 34 th Conference of the Austro-Swiss Region (ROeS) of IBS, Graz, Austria International Indian Statistical Association (IISA) Conference, Lincoln, NE, USA Advanced Methods & Data Science Seminar, Novartis, online International Conference on Robust Statistics (ICORS), Stresa, Italy
2024	GSK.ai PhD Symposium, London, UK Bernoulli-IMS 11 th World Congress, Bochum, Germany Causal Machine Learning workshop, Southampton, UK American Causal Inference Conference (ACIC), Seattle, WA, USA European Causal Inference Meeting (EuroCIM), Copenhagen, Denmark Response-Adaptive Randomisation in Clinical Trials Workshop, Cambridge, UK
2023	Statistics Student Seminar, University of Chicago, IL, USA Machine Learning and Data Science Seminar, Okinawa Institute of Science and Technology, Japan European Causal Inference Meeting (EuroCIM), Oslo, Norway Online Causal Inference Seminar
2022	American Causal Inference Conference (ACIC), Berkeley, CA, USA
2021	RIKEN Advanced Intelligence Project (AIP) Seminar, Japan, online International Conference on Machine Learning (ICML), online GSK.ai Research Symposium, online

Professional Service

Reviewer	Annals of Statistics Annals of the Institute of Statistical Mathematics Artificial Intelligence and Statistics Conference (AISTATS) Bernoulli Biometrika Causal Learning and Reasoning (CLear) Epidemiology Journal of the American Statistical Association Journal of the Royal Statistical Society - Series A Journal of the Royal Statistical Society - Series B Statistics in Medicine
Organizer	Causal Inference Reading Group at the University of Cambridge (2022 – 2024) PhD Student Lunch Seminar at the University of Cambridge (2023 – 2024)
Consultant	Statistics Clinic at the University of Cambridge (2020 – 2024)

Prizes and Scholarships

2023	Smith-Knight and Rayleigh-Knight Prize (Group 3)
2020 – 2024	GSK PhD Studentship
2014/5 – 2020	Scholarship of the German Academic Scholarship Foundation Max Weber Scholarship of the Elite Network of Bavaria Scholarship of the Maximilianeum Foundation

Teaching

École Polytechnique Fédérale de Lausanne

Instructor	2026 – Perspectives on Randomness in Statistics (PhD course)
Teaching Assistant	2025 – Statistical Computation and Visualization (Master course)
Supervisor	2026 – Young Researchers in Mathematics Program (summer school) 2026 – Bachelor Thesis, Elisa Masson (EPFL) 2025 – Bachelor Thesis, Lorian Guisan (EPFL)

University of Cambridge

Project Supervisor	2024 – Summer Graduate Student Project, Gianluca Covini (University of Pavia)
Teaching Assistant	2022 – Causal Inference (4 th year course) 2021 – Causal Inference (4 th year course)
Supervisor	2023 – Statistical Modelling (3 rd year course) 2023 – Statistics (2 nd year course) 2022 – Mathematics of Machine Learning (3 rd year course)

Ludwig-Maximilians University

Tutor	2016 – Numerics (2 nd year course)
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Industry Experience

2023	GlaxoSmithKline, AIML, Precision Oncology , Student Placement. Bayesian modelling of pairwise CRISPR knock-out experiments
2021	Unilever, SEAC , Industry Project. Optimal Bayesian experimental design of clinical studies for PBPK models
2019 – 2020	Siemens, Learning Systems , Working Student. Implementation of Recurrent Neural Networks in Tensorflow
2018	Gestafe , Data Science Internship. Business Intelligence for an insurtech start-up

Skills

Coding	R (proficient) LaTeX (proficient) SQL (basic)	Python (intermediate-) git (basic+) Java (basic)	Stan (intermediate-)
Languages	German (native) Spanish (intermediate-)	English (fluent) Japanese (beginner)	French (intermediate+)