

Juraj Bodík

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jurajbodik.com | +41 78 228 50 92 | juraj.bodik@unil.ch

PhD candidate in mathematical statistics focusing on the theory of causal inference/discovery, extreme value theory and uncertainty quantification.

EDUCATION

• University of Lausanne (DO-HEC), Switzerland

PhD candidate under Prof. Valérie Chavez-Demoulin

Sep 2021 – Present

Lausanne, Switzerland

- Expected completion: June 2026

- Topic: Estimating Unidentifiable Objects in Causal Inference

• Charles University, Faculty of Mathematics and Physics

BSc & MSc in Pure Mathematics and Mathematical Statistics

2016 – 2021

Prague, Czech Republic

- Excellence scholarship (grades in top 5%)

- Best Master's Thesis in Statistics (10,000 CZK award) under Prof. Zbyněk Pawlas

- Research assistant on the Primus GeMS project for outstanding research

EXPERIENCE

• University of Osaka, Faculty of Data Science

Visiting Student Researcher

Dec 2025 – Feb 2026

Osaka, Japan

- Collaborated with Prof. Shohei Shimizu on causal discovery.

• UC Berkeley, Department of Statistics

Visiting Student Researcher

Aug 2024 – Jan 2025

Berkeley, USA

- Collaborated with Prof. Bin Yu on causal inference and uncertainty quantification.

• Czech Academy of Sciences

Research Assistant (part-time)

Jun 2020 – Jun 2021

Prague, Czech Republic

- Conducted research under Prof. Milan Paluš; forming the basis of my master's thesis.

• Deloitte

Data Analytics Intern

Feb 2020 – Jun 2020

Prague, Czech Republic

- Developed automated R workflows for various projects.

• Trojsten NGO

Volunteer Educator and Event Organizer

2016 – 2023

Bratislava, Slovakia

- Delivered 80+ math lectures to high-school students, trained national Olympiad winners, organized math competitions with 200+ participants.

PUBLICATIONS

1. J. Bodík, V. Chavez-Demoulin (2025). *Identifiability of causal graphs under nonadditive conditionally parametric causal models*. **Journal of Machine Learning Research**.
2. J. Bodík, V. Chavez-Demoulin (2025). *Structural restriction in local causal discovery: identifying direct causes of a target variable*. **Biometrika**.
3. I. Azizi*, J. Bodík*, J. Heiss*, B. Yu (2025). *CLEAR: calibrated learning for epistemic and aleatoric risks*. **ICLR**. *Co-first authors.
4. J. Bodík (2024). *Extreme treatment effect: extrapolating causal effects into extreme treatment domain*. **Mathematics**.
5. J. Bodík, Z. Pawlas, M. Paluš (2024). *Causality in extremes of time series*. **Extremes**.

PREPRINTS

1. J. Bodík, Y. Huang, B. Yu (2025). *Cross-world assumption and prediction intervals for individual treatment effects*. Preprint submitted to **JRSS B**. [arXiv:2507.12581](https://arxiv.org/abs/2507.12581)
2. J. Bodík, O. Pasche (2024). *Granger causality in extremes*. Preprint submitted to **Bernoulli**. [arXiv:2407.09632](https://arxiv.org/abs/2407.09632)
3. J. Bodík (2025). *Counterfactual prediction with cross-world dependence*. Preprint submitted to **CleaR**.
4. J. Bodík, L. Mhalla, V. Chavez-Demoulin (2023). *Detecting causal covariates for extreme dependence structures*. Unpublished semester project; [arXiv:2212.09831](https://arxiv.org/abs/2212.09831)

GRANTS

- **Travel Grant FUNil (\approx 5,000 USD)** Dec 2025 – Feb 2026
Travel grant supporting research visit to Osaka University
 - Visiting Student Researcher in Prof. Shohei Shimizu's group.
- **Hasler Foundation Research Grant (\approx 10,000 USD)** Aug 2024 – Jan 2025
Highly competitive grant supporting research visit to UC Berkeley
 - Visiting Student Researcher in Prof. Bin Yu's group.

HONORS & AWARDS

- **Best Master's Thesis Award (10,000 CZK)** 2021
Top three master's theses in probability, statistics, and econometrics at Charles University
- **Research Assistantship – Primus GeMS Project (\approx 50,000 CZK)** 2020–2021
Awarded a research assistantship on the Primus GeMS project for outstanding research.
- **Excellence Scholarship at Charles University** 2021
Awarded for grades in the top 5%.
- **Bronze Medal – International Mathematics Competition (IMC)** 2020
Bulgaria
- **Winner (top 10) – National Mathematical Olympiad** 2016
Ranked among the national top 10 in the high-school mathematical Olympiad in Slovakia.

INVITED TALKS

- OCIS (Online Causal Inference Seminar)** Online Feb 2026
Invited speaker at the online causal inference seminar (the largest seminar in the field).
- Data science seminar** Osaka, Japan Dec 2025
Invited speaker at SANKEN+RIKEN - Data science and AI lab at University of Osaka.
- CHUV BDSC Seminar** Lausanne, Switzerland Sep 2025
Invited speaker at the Clinical Data Science Group, CHUV University Hospital.
- UAI 2024 Workshop on Causal Inference in Time Series** Barcelona, Spain Jul 2024
Invited speaker; one of seven invited speakers including Miguel Hernán and Gustau Camps-Valls.

CONTRIBUTED TALKS

- Shimizu lab seminar** Osaka, Japan Dec 2025
Speaker at Shimizu lab seminar at SANKEN, University of Osaka.
- Data Driven Decisions and Inference** Stanford, USA Nov 2024
Speaker at a weekly internal research seminar hosted by Lihua Lei, Stefan Wager, and Jann Spiess.
- Bin Yu Group Seminar, Berkeley's Casual Causal Seminar and PhD Students Seminar** Berkeley, USA Oct 2024
Presentations on methodological aspects of causal discovery and extreme value theory.
- Causal Science Center Conference** Stanford, USA Oct 2024
Contributed talk on causality and extremes.
- CMStatistics 2023** Berlin, Germany Dec 2023
Speaker on causal discovery.
- EuroCIM: European Causal Inference Meeting** Oslo, Norway Apr 2023
Speaker on causal discovery.
- BIRS: Combining Causal Inference and Extreme Value Theory in the Study of Climate Extremes** Kelowna, Canada (online) Jun 2022
Speaker at a Banff International Research Station workshop
- Robust Conference** Prague, Czech Republic Jun 2022
Speaker: presentation on causality in extremes of time series.
- CMStatistics 2021** London, UK (online) Dec 2021
Speaker: presentation on causality in extremes of time series.
- Valpred Workshop** Aussois, France Oct 2021
Speaker: presentation on causality in extremes of time series.
- Extreme Value Analysis Conference** Edinburgh, UK (online) Jun 2021
Speaker: Presentation on causality in extremes of time series.

POSTERS AT CONFERENCES/WORKSHOPS

Causal identification and discovery workshop at Newton Institute
Poster on causal discovery

Cambridge, UK March 2026

Causal Science Center Conference

Poster on a conference hosted by Stanford Causal Science Center.

Stanford, USA Oct 2024

EGU24

Poster on causal inference and extremes presented in the section "Many shades of causality"

Vienna, Austria Apr 2024

Causality in Extremes Workshop

Poster at the University of Geneva workshop on causality in extremes.

Geneva, Switzerland Feb 2024

TEACHING & SERVICE

• Lead Teaching Assistant (HEC Lausanne)

- Optimization Methods (2021–2023): Tutorials (lecture-type exercise sessions), exam preparation, and applied optimization sessions.
- Risk Analytics (2023–2025): Tutorials, exam preparation, grading, development and supervision of applied case studies for dozens of projects.
- Forecasting II (2021–2025): Tutorials, project supervision and consultations for MSc students.
- Forecasting I (2021–2025): Course coordination, grading, and advanced project mentoring.

• Peer Review

JRSS B; Statistics and Probability Letters; Behaviormetrika; REVSTAT; ICLR; Data Mining and Knowledge Discovery

• First Committee Member

Expertise Center for Climate Extremes (ECCE, UNIL)

- First member of a PhD committee at a newly established research center; responsible for outreach and seminar & event organization.

• Seminar Coordination

HEC-DO Seminars

- Primary coordinator: managed speaker outreach, budgeting and travel, publicity, and post-talk meetings.

SKILLS

- Programming: R, Python, L^AT_EX; primarily use R for academic work.
- Languages: English (fluent), Czech (fluent), French (upper intermediate), German (basic), Slovak (native)

SELECTED CODE & REPOSITORIES

• ITE_prediction_cross_world

Causal ITE prediction under cross-world assumptions



• structural-restrictions-in-local-causal-discovery

Structural restrictions in local causal discovery



• Granger-causality-in-extremes

Causality in extremes of time series



• Extreme_treatment_effect

Extrapolating causal effects into extreme treatment domain



• causal_cpcm

Conditionally parametric causal models



OTHER ACTIVITIES

• Ultimate Frisbee – World Championships

National Representation

2016-ongoing

- Represented Slovakia at the U20 World Championships

- Also competed for the Lausanne club Flyhigh at the Swiss National Championships

• Cipher Competition Series

Main organizer of an event with 250+ participants.

2020