

Juraj Bodík

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PhD candidate in Mathematical Statistics focusing on the theory of causal inference, extreme value theory, causal discovery, and uncertainty quantification.

EDUCATION

- **University of Lausanne (DO-HEC)**

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

- **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.

- Supported by a competitive Hasler grant (\approx 10,000 USD).

- **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** (to appear).
2. **J. Bodík**, V. Chavez-Demoulin (2025). *Structural restriction in local causal discovery: identifying direct causes of a target variable*. **Biometrika**.
3. **J. Bodík** (2024). *Extreme treatment effect: extrapolating causal effects into extreme treatment domain*. **Mathematics**.
4. **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*. In review at **JRSS B**. [arXiv:2507.12581](https://arxiv.org/abs/2507.12581)
2. **J. Bodík**, O. Pasche (2024). *Granger causality in extremes*. In review at **Bernoulli**. [arXiv:2407.09632](https://arxiv.org/abs/2407.09632)
3. **J. Bodík** (2025). *Counterfactual prediction with cross-world dependence*. **Preprint**.
4. I. Azizi*, **J. Bodík***, J. Heiss*, B. Yu (2025). *CLEAR: calibrated learning for epistemic and aleatoric risks*. **Preprint**. [arXiv:2507.08150](https://arxiv.org/abs/2507.08150) *Co-first authors.
5. **J. Bodík**, L. Mhalla, V. Chavez-Demoulin (2023). *Detecting causal covariates for extreme dependence structures*. **Preprint**; [arXiv:2212.09831](https://arxiv.org/abs/2212.09831)

GRANTS

- **Travel Grant FUNil (\approx 5,000 USD)** Dec 2025 – Jan 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

- 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.
- Data Driven Seminar at Stanford's causal inference group** Stanford, USA Nov 2024
Invited talk at Stanford's weekly Data Driven Seminar.
- Berkeley's Casual Causal Seminar** Berkeley, USA Nov 2024
Invited talk at Berkeley's weekly 'Casual Causal' seminar.

CONTRIBUTED TALKS AND POSTERS

- Causal Science Center Conference** Stanford, USA Oct 2024
Contributed talk and poster presentation hosted by Stanford Causal Science Center.
- Bin Yu Group Seminar and PhD Students Seminar** Berkeley, USA Oct 2024
Presentations on on methodological aspects of causal discovery and extreme value theory.
- EGU24** Vienna, Austria Apr 2024
Poster on causal inference and extremes presented in the section "Many shades of causality"
- Causality in Extremes Workshop** Geneva, Switzerland Feb 2024
Poster at the University of Geneva workshop on causality in 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
Talk at a Banff International Research Station workshop
- Robust Conference** Prague, Czech Republic Jun 2022
Presentation on causality in extremes of time series.
- CMStatistics 2021** London, UK (online) Dec 2021
Presentation on causality in extremes of time series.
- Valpred Workshop** Aussois, France Oct 2021
Presentation on causality in extremes of time series.
- CUSO: Statistics and Applied Probability** Les Diablerets, Switzerland 2021–2023
Participant in five workshops in statistics and probability.
- EVA — Extreme Value Analysis Conference** Edinburgh, UK (online) Jun 2021
Presentation on causality in extremes of time series.

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** 2016-ongoing
National Representation
 - Represented Slovakia at the U20 World Championships
 - Also competed for the Lausanne club *Flyhigh* at the Swiss National Championships
- **Cipher Competition Series** 2020
Main organizer of an event with 250+ participants.