

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)** Sep 2021 – Present
PhD candidate under Prof. Valérie Chavez-Demoulin Lausanne, Switzerland
 - Expected completion: June 2026
 - Topic: Estimating Unidentifiable Objects in Causal Inference
- **Charles University, Faculty of Mathematics and Physics** 2016 – 2021
BSc & MSc in Pure Mathematics and Mathematical Statistics 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** Aug 2024 – Jan 2025
Visiting Student Researcher 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** Jun 2020 – Jun 2021
Research Assistant (part-time) Prague, Czech Republic
 - Conducted research under Prof. Milan Paluš; forming the basis of my master's thesis.
- **Deloitte** Feb 2020 – Jun 2020
Data Analytics Intern Prague, Czech Republic
 - Developed automated R workflows for various projects.
- **Trojsten NGO** 2016 – 2023
Volunteer Educator and Event Organizer Bratislava, Slovakia
 - Delivered 80+ math lectures to high-school students, trained national Olympiad winners, organized math competitions with 200+ participants.

PUBLICATIONS

1. **J. Bodik**, V. Chavez-Demoulin (2025). *Identifiability of causal graphs under nonadditive conditionally parametric causal models*. **Journal of Machine Learning Research**.
2. **J. Bodik**, V. Chavez-Demoulin (2025). *Structural restriction in local causal discovery: identifying direct causes of a target variable*. **Biometrika**.
3. **J. Bodik** (2024). *Extreme treatment effect: extrapolating causal effects into extreme treatment domain*. **Mathematics**.
4. **J. Bodik**, Z. Pawlas, M. Paluš (2024). *Causality in extremes of time series*. **Extremes**.

PREPRINTS

1. **J. Bodik**, 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. Bodik**, O. Pasche (2024). *Granger causality in extremes*. In review at **Bernoulli**. [arXiv:2407.09632](https://arxiv.org/abs/2407.09632)
3. **J. Bodik** (2025). *Counterfactual prediction with cross-world dependence*. **Preprint**. [arXiv:2502.03453](https://arxiv.org/abs/2502.03453)
4. I. Azizi*, **J. Bodik***, 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. Bodik**, 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 (10,000CZK)** 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

- **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, \LaTeX ; 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