

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** (to appear).
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**.
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 (10,000 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

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- **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

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- **Programming:** R, Python,  $\text{\LaTeX}$ ; primarily use R for academic work.
- **Languages:** English (fluent), Czech (fluent), French (upper intermediate), German (basic), Slovak (native)

## SELECTED CODE & REPOSITORIES

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- **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

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- **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.*