

# Paweł Morzywołek

## CONTACT DETAILS

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University of Washington  
Department of Statistics  
C-318 Padelford Hall  
98105, Seattle, United States  
EMAIL: pmorzywo@uw.edu

## EDUCATION

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09/2023 - present	<b>Postdoctoral Researcher</b> University of Washington, USA Focus areas: Causal Inference, Semiparametric Theory Research project: Statistical inference for infinite-dimensional parameters with application to study the efficacy of infectious disease prevention strategies. Advisor: Prof. Alex Luedtke
11/2019 - 08/2023	<b>PhD in Statistical Data Analysis</b> Ghent University, Belgium Focus areas: Causal Inference, Dynamic Treatment Regimes Research project: Causal inference methods to optimize clinical decision-making in treatment initiation based on routinely collected data Advisors: Dr. Johan Steen, Prof. Wim Van Biesen, Prof. Stijn Vansteelandt
09/2013 - 08/2015	<b>Master Studies in Mathematics</b> ETH Zurich, Switzerland Focus areas: Statistical Learning, Mathematical Finance Master thesis: Non-parametric methods for estimation of Hawkes process for high-frequency financial data Advisors: Dr. Vladimir Filimonov, Prof. Peter Bühlmann, Prof. Didier Sornette
01/2014 - 04/2014	<b>Study Abroad in Statistics and Actuarial Science</b> University of Waterloo, Canada Focus areas: Statistical Learning, Machine Learning, Dependence Modelling
09/2010 - 09/2014	<b>Bachelor Studies in Mathematics</b> ETH Zurich, Switzerland Focus areas: Probability Theory, Statistics Bachelor thesis: Convergence of discrete random trees to the continuum random tree Advisor: Prof. Pierre Nolin

## WORK EXPERIENCE

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- 04/2019 - 10/2019 | **Senior Consultant**, EMEIA Financial Services - Actuarial  
Ernst & Young, Zurich, Switzerland  
*Supported development of premium and reserve risk modules for the Swiss Solvency Test internal risk model of an international insurance company.*
- 10/2018 - 03/2019 | **Senior Consultant**, EY Wavespace Artificial Intelligence Center  
Ernst & Young, Madrid, Spain  
*Supported enhancement of a credit risk model with machine learning algorithms for a bank from the United Kingdom.*  
*Supported development of a validation framework for machine learning models aiming to prevent discriminatory outcomes.*
- 02/2016 - 09/2018 | **Consultant**, EMEIA Financial Services - Actuarial  
Ernst & Young, Zurich, Switzerland  
*Supported development of Swiss Solvency Test (SST) internal models for premium, reserve and business risks for a major Swiss insurance company.*  
*Participated in several audits and reserving reviews for non-life and re- insurance companies.*  
*Developed process automation of a reserving review for a reinsurance company.*  
*SST, Solvency 2 and appointed actuary mandates support for various non-life and re- insurance companies.*
- 09/2015 - 12/2015 | **Teaching Assistant**, African Institute for Mathematical Sciences (AIMS)  
Muizenberg, Cape Town, South Africa  
*Supervised students in the multiple courses in mathematics, physics and computer science (i.e. Introduction to Scientific Computing in Python, Problem Solving in Physics, Probability and Statistics, Algebra, Finite-dimensional Quantum Mechanics and Quantum Computing).*  
*Gave a class on "Stochastic asset models and their analysis using Monte Carlo methods" at the workshop "Mathematical and Computer Methods for Understanding Financial Markets" organised at AIMS.*
- 02/2015 - 08/2015 | **Research Assistant**, Professorship of Computational Social Sciences  
Department of Humanities, Social and Political Sciences  
ETH Zurich, Switzerland  
Professorship of Computational Social Sciences  
*Analysed systemic risk in banking system and modelled propagation of perturbations in financial interbank lending networks.*  
*Developed an agent-based model for an interbank lending network.*
- 06/2014 - 12/2014 | **Research Assistant**, Chair of Entrepreneurial Risks  
Department of Management, Technology and Economics  
ETH Zurich, Switzerland  
Chair of Entrepreneurial Risks  
*Analysed parametric and non-parametric methods for estimation of a multivariate Hawkes process for financial data.*  
*Applied the Hawkes process to search for irregular trading behaviour in high-frequency financial data.*  
*Developed and backtested a model for detecting extreme events in financial data and used it as an early warning system in analysis of financial markets.*

## TEACHING

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Spring 2023	<b>Causal Machine Learning</b> , Ghent University, Belgium
Spring 2020/2021/2022	<b>Causality and Missing Data</b> , Ghent University, Belgium
Fall 2015	<b>Introduction to Scientific Computing in Python, Problem Solving in Physics, Probability and Statistics, Algebra, Finite-dimensional Quantum Mechanics</b> , African Institute for Mathematical Sciences (AIMS), South Africa

## TALKS AND PRESENTATIONS

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05/2024	<b>Inference on Variable Importance Measures for Heterogeneous Treatment Effects</b> American Causal Inference Conference 2024 Poster presentation
07/2023	<b>On a General Class of Orthogonal Learners for the Estimation of Heterogeneous Treatment Effects</b> European Meeting of Statisticians Contributed talk
12/2022	<b>Sequential Counterfactual Prediction to Support Individualized Decisions on Treatment Initiation</b> IMS International Conference on Statistics and Data Science Contributed talk
12/2022	<b>Sequential Counterfactual Prediction to Support Individualized Decisions on Treatment Initiation</b> Lorentz Center Workshop “Counterfactual Prediction for Personalized Healthcare” Invited talk
11/2022	<b>Sequential Counterfactual Prediction to Support Individualized Decisions on Treatment Initiation</b> MLinPL Conference Contributed talk
08/2022	<b>Sequential Counterfactual Prediction to Support Individualized Decisions on Treatment Initiation</b> Annual Conference of the International Society for Clinical Biostatistics Contributed talk
05/2022	<b>Unified Framework for Heterogeneous Treatment Effects Estimation</b> American Causal Inference Conference 2022 Poster presentation
05/2022	<b>Using Routinely Collected Data to Define the Optimal Timing to Initiate Renal Replacement Therapy in AKI Patients</b> Belgian Society of Nephrology (BVN-SBN) Annual Meeting 2022 Mini-oral presentation (online)
05/2022	<b>Using Routinely Collected Data to Define the Optimal Timing to Initiate Renal Replacement Therapy in AKI Patients</b> 59 <sup>th</sup> European Renal Association (ERA) Congress 2022 Mini-oral presentation (online)

04/2022	<b>Does it Matter When We Start RRT in AKI? The Views of a Data Scientist</b> 27 <sup>th</sup> Belgian Dialysis Symposium 2022 Invited talk
08/2021	<b>Counterfactual Prediction to Support Individualized Decisions on Treatment Initiation</b> Joint Statistical Meetings (JSM) Speed session presentation (online)
05/2021	<b>On Estimation and Cross-validation of Dynamic Treatment Regimes with Competing Risks</b> European Causal Inference Meeting (EuroCIM) Contributed talk (online)
08/2020	<b>Assessing the Optimal Time to Start Renal Replacement Therapy Using Dynamic Treatment Regimes</b> Annual Conference of the International Society for Clinical Biostatistics Contributed talk (online)

## FELLOWSHIPS

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2024-2025	<b>PIMS-Simons</b> Postdoctoral Fellowship, USA
2024-2025	<b>UW Data Science</b> Postdoctoral Fellowship, USA

## COMPUTER SKILLS

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R, Python

June 26, 2024