

Jakob R. Juergens

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Education

Ph.D.	Economics	University of Wisconsin - Madison	2022 – Present
M.Sc.	Economics	University of Wisconsin - Madison	2022 – 2024
M.Sc.	Economics	Bonn University	2020 – 2022
B.Sc.	Economics	Bonn University	2017 – 2020

Work in Progress

Asymptotic Theory for Nonparametric Regression using Random Forests

We study the theoretical foundations and inferential properties of modern nonparametric estimators such as random forests and other ensemble learners through the lens of distributional approximation methods. Central to this approach is the framework of generalized U-statistics that unifies many of these algorithms and offers a rich theoretical perspective on their asymptotic and finite-sample behavior.

Causal Inference with Generalized U-Statistics

I study how to use the novel theory for ensemble estimators to improve the available procedures for Causal Inference. In this project, I focus on the estimation of causal parameters using generalized U-Statistics in the presence of functional nuisance parameters and develop asymptotically valid inference procedures. At the moment, my attention is focused on bagged nearest-neighbor estimators due to their conceptual similarity to random forests.

Research Experience

Research Assistant	University of Wisconsin - Madison	Sep 2024 – Present
<ul style="list-style-type: none"> • Work for Jack Porter in a project on asymptotic theory for batched bandits 		
Project Assistant	University of Wisconsin - Madison	Jun 2023 – Aug 2023
<ul style="list-style-type: none"> • Work for Jack Porter in projects on asymptotic theory for batched bandits and inference in instrumental variable models with weak instruments 		
Research Assistant	Bonn University	Nov 2020 – Jun 2022
<ul style="list-style-type: none"> • Programming in R and C++ for Joachim Freyberger and Lena Janys • Research position created by the Department of Economics as part of the <i>German Excellence Strategy for Research</i> 		
Internship	German Council of Economic Experts	Aug 2020 – Oct 2020
<ul style="list-style-type: none"> • Work for the Business Cycle Analysis and Monetary Policy Teams • GDP Forecasting with data of varying frequency and publication lag 		
Student Assistant	Bonn University	Apr 2018 – Jun 2020
<ul style="list-style-type: none"> • Scientific and administrative assistant of Jürgen von Hagen 		

Teaching Experience

- Teaching Assistant** **Introductory Econometrics** Spring 2024
- Teaching Assistant for Christopher McKelvey
- Teaching Assistant** **Mathematical Economics (PhD Math Camp)** Fall 2023
- Teaching Assistant for John Kennan in a PhD-level class
 - Winner of the Juli Plant Grainger Teaching Excellence Scholarship

Conference and Seminar Presentations


New York Camp Econometrics XIX Syracuse University 2025

Awards and Scholarships


- Student Research Grants - Conference Presentation** UW - Madison 2025
- Juli Plant Grainger Teaching Excellence Scholarship** UW - Madison Fall 2023
- Two-year Graduate School Fellowship** UW - Madison Awarded in 2022
- Scholarship** German Academic Scholarship Foundation 2016 – 2024
- Scholarship Representative for Bonn (2020 – 2021)
- Honors Program** Bonn University 2019 – 2022


Other Projects


Co-Organizer: Ph.D. Student Reading Group – Econometrics

Master's Thesis: Bugni and Horowitz (2021) Permutation Tests for the Equality of Distributions of Functional Data [Repo](#) 

Course Project: Basis Choice for Scalar-on-Function Regression with Applications to Near-Infrared Spectroscopy [Repo](#) 

Course Project: Outlier Detection in Sensor Data using Functional Depth Measures [Repo](#) 

Course Project: Comparison of Variable Importance Feature Selection Methods in Continuous Response Random Forest [Repo](#) 

Bachelor's Thesis: Malicious Intent and Multiple Testing in Regression Discontinuity Estimation [PDF](#) 

Citizenship and Languages

Citizenship German

Languages German (native) English (fluent) French (intermediate) Mandarin (beginner)