

# David Wambach

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## Academic Background

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- M.Sc. Technical University of Munich**, Mathematics (Grade: 1.9) Oct 2020 – Sep 2023
- **Converted GPA** [🔗](#): 3.6/4.0
  - **Coursework**: Functional Analysis, Partial Differential Equations, Probability Theory, Computational Social Choice, Algorithmic Game Theory, Advanced Seminar Course: Economics and Computation
  - **Thesis**: “Learning with Symplectic Adjustment in Auctions”
  - **Advisor**: Prof. Martin Bichler
- B.Sc. University of Cologne**, Mathematics (Grade 1.3, with Honors) Oct 2017 – Sep 2020
- **Converted GPA** [🔗](#): 3.9/4.0
  - **Coursework**: Analysis I – III, Linear Algebra I – II, Algorithmic Mathematics and Programming, Numerical Mathematics, Introduction to Probability Theory and Statistics, Introduction to Microeconomics
  - **Thesis**: “Ramanujan’s Definition of Mock Theta Functions”
  - **Advisor**: Prof. Kathrin Bringmann
- Additional Coursework – Yale University** Aug 2024 – Dec 2024
- General Economic Theory: Microeconomics (Grade: HP)  
*Yale Graduate School of Arts and Sciences*

## Research

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### Working Papers

- “1P vs. 3P: The Choice of Distribution Channels on Digital Platforms”

### Work in Progress

- “Learning with Symplectic Adjustment in Auctions”

## Research Assistant Experience

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- Yale Tobin Center for Economic Policy**, Pre-Doctoral Fellow, Economics New Haven, CT  
Jul 2024 – Today
- Computed and checked model examples and boundary cases, derived comparative statics, verified assumptions used in drafts, derived and proved follow-on lemmas from the existing results, wrote proofs, proofread and edited working papers, and conducted literature reviews
  - Produced figures in Python and LaTeX and prepared final plot files for papers, built small computational notebooks to validate analytic formulas and equilibrium conditions, and aligned numerical outputs with theory
  - Supported preparation of lectures and seminars
  - **Advisor**: Prof. Dirk Bergemann
- Goethe University Frankfurt**, Research Assistant, Economics Frankfurt, Germany  
Nov 2023 – May 2024
- Theoretically extended the Bayesian Nash Equilibrium algorithm from Shen et al.’s “Bayesian Nash Equilibrium in First-Price Auctions with Discrete Value Distributions” to an advertising setting with intermediated two-stage auctions, where networks run sub auctions and submit a single composite bid
  - Implemented the derived model in Python, produced price, allocation, and revenue predictions, and benchmarked outcomes against canonical formats, for example, generalized second price auctions, to assess revenue and efficiency
  - **Advisor**: Prof. Roman Inderst

- University of Cologne (Germany)**, Research Assistant, Mathematics
- Helped to prepare lectures and seminars in Analytic Number Theory
  - Supported research by proofreading and editing scientific articles
  - **Advisor:** Prof. Kathrin Bringmann

Cologne, Germany  
Oct 2019 – Sep 2020

## Work Experience

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- KPMG AG, Munich**, Consulting Working Student, Financial Services – CFRO Insurance
- Advanced IFRS 17 implementation at a large insurer through reconciliation of SAP software postings with projection data, and strengthened controls

Munich, Germany  
Oct 2021 – Feb 2023

- KPMG AG, Cologne**, Consulting Intern, Financial Services – CFRO Insurance
- Built Solvency II (EU-regulation) analytics, including automated validation of quantitative reporting templates and budgeting aligned with the materiality concept
  - Contributed to IFRS 17 (EU-regulation) implementation by testing planning tools and documenting data flows

Cologne, Germany  
Jun 2021 – Oct 2021

- TWS Partners AG, Munich**, Consulting Intern, Applications of Game Theory
- Applied industrial-organization concepts to supplier relationship design in shrinking automotive markets, focusing on incentives and contracts
  - Applied mechanism design and auction theory, analyzing procurement auction formats, reserve price policy, information release, bidder asymmetries, and consortium bidding, then translated insights into implementable sourcing strategies
  - Delivered analytic work products in a multi-stakeholder setting, turning data and constraints into actionable recommendations

Munich, Germany  
Jul 2019 – Sep 2019

## Language and Software Skills

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**Languages:** German (Native), English (Fluent), French (basic), Latin (basic)

**Software:** Python,  $\LaTeX$ , Git, MATLAB, Java, MS-Office (VBA)