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last updated September 25, 2025

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Gerrit Bauch

game theorist, economist, mathematician

🏢 professional profile

I am a mathematical economist with a passion for game and decision theory under uncertainty. In my dissertation, I have used my mathematical background to analyze conflict resolution under Knightian uncertainty and study the impact of noise on the grammar of languages.

🎓 education

Bielefeld University, Germany **2019–2024**

Dr. rer. pol (Ph.D. in economics), passed with distinction (*summa cum laude*).

“From words of approach to words of departure: Essays on noisy communication and partnership dissolution under uncertainty”

Supervisors: Prof. Dr. Riedel, Bielefeld University and Prof. Andreas Blume, PhD, University of Arizona.

Heidelberg University, Germany **2015–2019**

M.Sc. in mathematics with economics as field of application. Overall grade: 1,1.

“Über eine Vermutung aus der Theorie Siegelscher Modulformen im Spezialfall $g = 2$ und $k = 5/2$ ”.

Supervised by Prof. Dr. Rainer Weissauer, Heidelberg University.

Heidelberg University, Germany **2012–2015**

B.Sc. in mathematics with economics as field of application. Overall grade: 1,4.

“Algebraisch-Geometrische Codes”.

Supervised by Prof. Dr. Kay Wingberg, Heidelberg University.

🏢 research positions & work experience

Bielefeld University, Germany **2019–actual**

graduate researcher (2019-2024) & postdoctoral researcher (since February 2024)

Center for Mathematical Economics and the Center for Uncertainty Studies at Bielefeld University.

Bielefeld University, Germany **2020–2023**

IT support at the Center for Mathematical Economics. Tasks included general user assistance, website building (XML based CMS Roxen 5 & 17) and administration, AD & GPO management and hardware and software provisioning (ivanti landesk, citrix workspace).

Heidelberg University, Germany **2014**

undergraduate research assistant

Chair of Labor Economics of Prof. Dr. Christina Gathmann, Alfred-Weber institute

📄 scientific output

publications

Gerrit Bauch and Frank Riedel. “The Texas Shoot-Out under Knightian uncertainty”. In: *Games and Economic Behavior* 146 (2024), pp. 35–50. ISSN: 0899-8256. DOI: <https://doi.org/10.1016/j.geb.2024.04.009>. URL: <https://www.sciencedirect.com/science/article/pii/S0899825624000605>.

working papers

Gerrit Bauch and Lorenz Hartmann. *Correlation uncertainty: a decision-theoretic approach*. 2025. arXiv: 2503.13416 [econ.TH].

Gerrit Bauch and Manuel Foerster. *Strategic communication of narratives*. 2025. arXiv: 2410.23259 [econ.TH].

Gerrit Bauch. “Effects of Noise on the Concept Formation of Languages”. In: *Center for Mathematical Economics Working Papers* (2021). R&R (minor revision) in the *International Journal of Game Theory*. Current version available at https://gbauch.github.io/assets/pdf/Effects_of_noise.pdf.

Gerrit Bauch. “Underreaction and dynamic inconsistency in communication games under noise”. In: *arXiv* (2023). arXiv: 2311.12496 [econ.TH].

Gerrit Bauch. *Independence and indifferent points imply continuity*. 2025. arXiv: 2411.17883 [econ.TH].

work in progress

Gerrit Bauch, Arthur Dolgoplov, and Manuel Foerster. *Strategic communication of narratives: an experiment*. Data collection of the experiment currently running. 2025.

Gerrit Bauch and Guillaume Pommey. *The economic impact of shotgunfunds on Shoot-Out clauses*. A theoretical analysis of the welfare improvements of partnership dissolutions in presense of shotgunfunds. 2025.

Gerrit Bauch and Lars Müller. *Role Preferences in Texas Shoot-Out clauses*. Theoretical foundation why Shoot-Out clauses stabilize co-owned partnerships, including generalizations of a McAfee 92 result to ex-post scenarios. 2025.

Gerrit Bauch. *On a Conjecture of Siegel modular forms in the case $g = 2$ and $k = 5/2$* . Based on my master thesis. While certain logarithmic derivatives of cusp forms lead to descriptions of non-holomorphic Eisenstein series, I show that for genus $g = 2$, the three cusp forms of weights 10, 12 and 35 do not admit such a representation. 2025.

Gerrit Bauch and Manuel Foerster. *Robust communication of narratives*. A network-based extension of the 2021 AER paper *Using Models to Persuade* by Schwarzstein & Sunderam. 2025.

dissertation

Gerrit Bauch. “From words of approach to words of departure: Essays on noisy communication and partnership dissolution under uncertainty”. In: *Bielefeld University library* (2024). Available at <https://pub.uni-bielefeld.de/record/2988256>.

teaching

Bielefeld University

- teaching assistant for Microeconomics 2 (graduate),
coordinator of the Economic Theory Lunch Seminar summer 2025
- teaching assistant for Microeconomics 1 (graduate),
coordinator of the Economic Theory Lunch Seminar winter 2024
- *instructor* for an exercise course on Risk and Insurance (undergraduate)
including preparing exercise sheets and oral examinations summer 2023 & 2024
- *instructor* for a reading group on
“Recent developments in game theory and general equilibrium theory”
(graduates, PhD candidates, postdocs) winter 2022
- *teaching assistant* in mathematics for economists 2 winter 2021
- *teaching assistant* in microeconomics 2 (graduate) summer 2020
- *tutor* for game theory (undergraduate) winter 2019

Heidelberg University

- *teaching assistant* in complex analysis 1 (undergraduate)
including preparing exercise sheets and written examinations summer 2018
- *teaching assistant* in complex analysis 2 (undergraduate)
including preparing exercise sheets and oral examinations winter 2016

- *tutor* for real analysis, algebra, complex analysis (undergraduate)

2015–2019

talks & meetings

past talks & meetings

- *Dependence Uncertainty* 2025
Talk at the *II CUDE Retreat* in Bergisch Gladbach, September 24, 2025.
- *Strategic communication of narratives* 2025
Talk at the Annual Conference 2025 of the Germany Economic Association (Verein für Socialpolitik) in Cologne, Germany, September 15, 2025.
- *Quantifying and Managing Uncertainty* 2025
Pitch introducing the Bielefeld Focus Area Quantifying and Managing Uncertainty (QUAMU) to the administrative staff at Bielefeld University on September 4, 2025.
- *Correlation Uncertainty: a decision-theoretic approach* 2025
Talk and poster presentation at the 14th International Symposium on Imprecise Probabilities (ISIPTA) in Bielefeld, July 15, 2025.
- *Strategic communication of narratives* 2025
Talk at the XXIV SAET Conference on Ischia, Italy, July 1, 2025.
- *Strategic communication of narratives* 2025
Talk at the 14th Lisbon Meetings in Game Theory and Applications, Lisbon, Portugal, June 20, 2025.
- *Correlation Uncertainty: a decision-theoretic approach* 2025
Talk at the Workshop on “Unforeseen Contingencies: Representations and Applications” in Grenoble, France, June 5, 2025.
- *Strategic communication of narratives* 2025
Talk at the Seminar of Economics and Management (SEAM) at Paderborn University, Germany, May 18, 2025.
- *Strategic communication of narratives* 2025
Talk at the Groupe d’Analyse et de Théorie Economique (GATE) at Saint-Étienne University, France, May 13, 2025.
- Guest of the *Standing Committee for Economic Theory* of the Germany Economic Association (Verein für Socialpolitik), May 9-10 in Berlin, Germany. 2025
- *Correlation Uncertainty* 2025
Talk at the 2nd Workshop on Learning Under Weakly Structured Information in Tübingen, Germany, April 8, 2025.
- *Strategic communication of narratives* 2025
Talk at the ADRES conference in Strasbourg, France, January 30, 2025.
- *Strategic communication of narratives* 2024
Talk at the LEMMA séminaire in Paris Panthéon-Assas, France, October 8, 2024.
- *An academic stay abroad* 2024
Introduction to planning a stay abroad during the PhD at the *I CUDE Retreat* in Willingen, October 1, 2024.
- *The Texas Shoot-Out under Knightian Uncertainty* 2024
Talk at the Conference on Mechanism and Institution Design in Budapest, Hungary, July 12, 2024.
- *The Texas Shoot-Out under Knightian Uncertainty* 2024
Talk at the ESEM 2024 in Rotterdam, Netherlands, August, 2024.
- *Effects of noise on the grammar of languages* 2024
Talk at the 2nd Paris Workshop on Games, Decisions, and Language in Paris, France, on June 13, 2024.

- *Ambiguity aversion and the direction of dynamic inconsistency in sender-receiver games of common interest* **2023**
Talk at the SAET 2023 in Paris, France, on July 17, 2023).
- *The Texas Shoot-Out under Knightian Uncertainty* **2023**
Talk at the Summer School on Risk and Uncertainty in Economics, Insurance and Finance 2023 in Bielefeld, Germany, on July 7, 2023.
- *The Texas Shoot-Out under Knightian Uncertainty* **2023**
Talk at the RUFE 2023 conference in Johannesburg, South Africa, on April 4, 2023.
- *The Texas Shoot-Out under Knightian Uncertainty* **2022**
Talk at the Stony Brook International Conference on Game Theory in Stony Brook, Long Island, on July 21, 2022.
- *The Texas Shoot-Out under Knightian Uncertainty* **2022**
Online talk at the SAET 2022 at the ANU on July 21, 2022)
- *The Texas Shoot Out under Knightian Uncertainty* **2022**
Talk at the economics seminar at the Eller College of Management at the University of Arizona, Tuscon on March 23, 2022.
- *What did you say? Introducing a Metric-Dependent Stochastic Noise to Voronoi Languages* **2022**
IBE/Brown bag seminar at the Eller College of Management at the University of Arizona, Tuscon on February 10, 2022.
- *Effects of noise on the grammar of Voronoi languages* **2021**
Online talk the advanced seminar on general linguistics at the University of Tübingen on May 4, 2021.

research stays

University of Basel, Switzerland **2024 & 2025**
Guest researcher at Basel University, March 18–22, 2024 & February 23–March 2, 2025. Invited by Georg Nöldeke and Lorenz Hartmann.

University of Arizona, USA **2022**
Research stay from January to May 2022 at the Eller College of Management, University of Arizona. Financial support through a DAAD scholarship and a BGTS mobility grant. Invited by Prof. Andreas Blume, PhD.

referee activities

Economic Theory, Games and Economic Behavior, International Journal of Game Theory, Journal of Economic Behavior & Organization

scholarships, nominations & rewards

- Best Teaching Price (Tutorial Microeconomics 2, graduate) **summer 2025**
- French professorial qualification (qualification MCF) **2025**
in economics (section 5) and mathematics (section 25)
- Best Teaching Price (Tutorial Microeconomics 1, graduate) **winter 2024/2025**
- Best Dissertation Prize of Bielefeld University **2024**
- DAAD doctoral scholarship **2022**
- BGTS mobility grant **2022**

technical skills

sagemath, maple, mathematica, L^AT_EX, python, html, haskell, C++, desktop management with ivanti landesk (citrix), Roxen 17 (CMS)


languages


German (native), English (business competence), Swedish (fluent), French (upper intermediate, B2), Chinese (intermediate, HSK 4)

extracurricular activities

- Mid-level faculty representative of the Bielefeld Graduate School of Economics and Management
2024-actual
- Representative of the academic mid level at the Faculty of Economics and Business Administration at Bielefeld University since October 2024 **2024-actual**
- Doctoral Representative of the Bielefeld Graduate School of Economics and Management from May 2021 to October 2023 **2021-2023**
- Member of the German-Swedish Society, Heidelberg e.V. **2019-actual**

hobbies

 hiking, table tennis, apnea diving, climbing, wave surfing

 learning new languages

 admirer of the poems by Wallace Stevens

references

For reference you may contact:

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Tucson, Arizona 85721-0108
USA

Prof. Dr. Yves Breitmoser
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