

HIGHLIGHTS

Innovation Studies

Economic Methods

Python & SQL

Machine Learning

R & Stata

CONFERENCES & WORKSHOPS

- EPIP (2021, 2023, 2025)
- DRUID (2021)
- EuroTech (2019, 2021)
- REGIS (2023, 2025)
- Data and Algorithms (2025)
- WICK (2019)
- Various lunch seminars

TEACHING

- Network society: Citation networks (lecture)
- Patents design rights & standards (seminar)
- Economics of innovation: introduction (seminar)
- Economic policy (seminar)
- Bachelor & Master Thesis (supervision)

CONTACT

📍 Eindhoven, Netherlands



BENJAMIN BUETTNER

Curriculum Vitae

ACADEMIC TRACK

Postdoc

Eindhoven University of Technology

Feb. 2024 - NOW

Developing scalable methods to identify patent–paper pairs (PPPs) by applying deep learning to the text, images, and metadata of patents and scientific articles. Reconstructing these direct patent–article networks enables more precise analyses of how fundamental research translates into innovation, with implications for policies on supporting basic science.

- Trained neural networks for image- & text-based similarity detection
- Built scalable pipelines to systematically identify PPPs
- Build algorithm and datasets to share with the community

Ph.D. Candidate

Eindhoven University of Technology

Promotor: Rudi Bekkers; Supervision: Emilio Raiteri

June 2019 - NOW

Developing novel approaches to analyze knowledge diffusion, combining IP data with machine learning and econometric methods to examine how diffusion barriers have evolved in the big data era and how they shape the follow-on use of disclosed knowledge.

- Empirically tested the effect of machine translation on cross-border knowledge diffusion using patent citations
- Linked patent citations to H-1B visa data to study talent sourcing & migration patterns
- Applied image recognition to explore patents as substitutes for closed-access papers

PUBLICATIONS IN PEER-REVIEWED JOURNALS

- Büttner, B., Firat, M., Raiteri, E., 2022. **Patents and knowledge diffusion: the impact of machine translation**. Research Policy 51, 104584. <https://doi.org/10.1016/j.respol.2022.104584>
- Maharjan, P., Hauck, M., Kirkels, A., Büttner, B., de Coninck, H., 2024. **Deriving experience curves: a structured and critical approach applied to PV sector**. Technol. Forecasting Social Change 209, 123795.

WORKING PAPERS

- Büttner, B., Raiteri, E., Bekkers, R.N., 2023. **Patent disclosure and migration: unraveling the role of examiners in signaling talent and knowledge transfer**, presented at: 18th Conf. of Europ. Policy for IP Association, EPIP 2023.
- Büttner, B., Raiteri, E., 2024. **Unveiling Hidden Connections Between Science and Innovation A Novel Approach to Patent-Paper Pairs**, presented at: 19th Conference of European Policy for Intellectual Property Association, EPIP 2024. <https://doi.org/10.1016/j.techfore.2024.123795>
- Büttner, B., Raiteri, E., 2025. **Breaking the Paywall: Patents as Channels for Scientific Disclosure**, presented at: 20th Annual Conference of European Policy for Intellectual Property Association, EPIP 2025.

EDUCATION

2011 - 2016

B.A. Sociology & Pedagogy
FAU, Germany

2016 - 2018

M.A. Sociology
FAU, Germany

SKILLS

Data Science

Proficient in SQL, Python & R. Skilled with Pandas, Numpy, webscraping (beautifulsoup4, selenium) & data visualization libraries.

Statistical Methods

Good knowledge of econometric and statistical methods (e.g. linear & panel data models, multivariate analysis, sampling techniques, causal inference)

Machine Learning

Trained neural networks for similarity detection. Experience with TensorFlow and scikit-learn; Applied NLP techniques (NLTK, spaCy).

Research and Writing

Excellent skills in \LaTeX , Markdown, and MS Office: Excel, Access, Powerpoint, Word & Visual Basic for Applications (VBA).

LANGUAGES

German Native tongue

English Business fluent

Chinese Advanced

INTERESTS

- Home Improvements & Automation (Rasp. Pi, Unraid)
- Cultural exchange & collaboration
- Sports (circuit training, biking), Woodworking, Cooking.

WORK EXPERIENCE

Academic & Team Leader

Jiangsu University of Technology, China

2017 - 2019

Managing an international team of academics at the University in Changzhou.

- Giving Lectures on cultural, sociological, and linguistic topics
- Teaching Students the German language
- Managing an international team

Researcher

Sophia University, Japan

2017

Part of a research team that evaluated western waste management concepts in model facilities in East Asia.

- Collecting and extracting data using T-SQL
- Statistical evaluation & modeling (R and Python)
- Organizing the Sustainable University Development Workshop with Focus on Renewable Energy (SUDre) Held at ICU

Working Student

Siemens AG, Germany

2015-2017

Assist, as part of the Export Control and Customs department, divisions of Siemens AG worldwide.

- Evaluation and analysis, using Excel and Visual Basic (VBA)
- Database maintenance and inspection (Access / T-SQL)

German Teacher

IBZ German Language School, China

2014

Research Assistant

Swinburne Uni. of Technology, Australia

2013

Applied research as an assistant in one of Australia's largest humanities and social science research centers. Focused on social policy concerns, including migration, homelessness, and infrastructure.

VOLUNTEER EXPERIENCE

TIS PhD community Committee

TUe, Eindhoven, Netherlands

2021-2024

Helped with SUDre sustainability workshop

ICU, Tokyo, Japan

2017

„Buddy“ (Teacher for exchange students)

FAU, Germany

2015

Care for the elderly

AWO, Germany

2010-2012

Care for persons with disabilities

Workers' Welfare Organisation, Germany

2008-2010