



# FLORENCE BOCKTING

RESEARCH SCIENTIST & RSE

Postdoctoral research software engineer in the Bayesian Workflow Group at Aalto University, implementing Bayesian methods in open-source, well-tested software within the Stan ecosystem (primarily in R). Holds a doctorate in computational statistics (TU Dortmund) on simulation-based expert prior elicitation, with publications in peer-reviewed journals and authorship of the Python package elicito (PyPI, conda-forge). Background spanning psychology, cognitive science, and climate science. Contributor to multiple established open-source projects in Python and R. Focus: reproducible research software and collaboration across scientific domains.

## CONTACT

- [linkedin.com/in/florence-b-3a4037321](https://www.linkedin.com/in/florence-b-3a4037321)
- [florencebockting.bsky.social](https://github.com/florencebockting)

## LANGUAGES

German (mother tongue)  
 English (fluent)  
 French (intermediate)

## CORE SKILLS

Python, R  
 Bayesian statistics  
 Research software engineering  
 Data pipelines  
 Reproducible science

## FOCUS AREAS

Open source software  
 Bayesian methods  
 Computational modelling  
 Cognitive & social science

## PROGRAMMING & TOOLS

### Languages

Python, R, Stan

### RSE Workflow

Git, GitHub Actions, pytest, testthat, Quarto, Jupyter, JupyterText, Rmd

### Packaging & Docs

uv, pixi, renv, PyPI, conda-forge, Sphinx, Read the Docs

### Pipelines & Compute

Prefect, HPC, Linux

## EXPERIENCES

### Research Scientist / Research Software Engineer

2026 – Present

Bayesian Workflow Group, Computer Science Department  
*Aalto University, Espoo, Finland · PI: Prof. Dr. Aki Vehtari*

- Postdoctoral research software engineer implementing Bayesian statistics in software, primarily within the Stan ecosystem
- R package development: implementing novel research results in open-source software; improving, refactoring, and maintaining existing R packages

### Research Scientist / Research Software Engineer

2025 – 2026

Climate Resource GmbH  
*Berlin, Germany*

- Research scientist and software engineer developing greenhouse-gas concentration data pipelines for earth system modelling groups
- ESA-funded project: designed and implemented a data pipeline covering scraping, preprocessing, and assimilation of multi-source observational data (ground-based and satellite), resulting in a unified, standardised data product

### Consultant

Aug – Dec 2025

Jacobs Foundation  
*Zürich, Switzerland*

- Focus area: Expert prior elicitation
- Implemented expert prior elicitation to support internal decision-making processes

### Research Scientist

2022 – 2025

Computational Statistics, Statistics Department  
*TU Dortmund University · PI: Prof. Dr. Paul-Christian Bürkner*

2023 - 2025: TU Dortmund  
 2022 - 2023: SC SimTech, University of Stuttgart

- Doctoral research in computational statistics on simulation-based expert prior elicitation
- Developed a method for learning prior distributions in Bayesian models from expert knowledge; implemented the approach as the open-source Python package elicito (PyPI and conda-forge)

## Research Scientist

2020 – 2022

Methods & Statistics, Psychology Department

*Philipps-University Marburg, Germany · PI: Prof. Dr. Daniel W. Heck*

- Focus areas: Statistical method development, computational and mathematical modelling, social psychology, formalisation of verbal theories
- Formalised a verbal theory of truth judgment and the truth effect in social psychology by developing a computational model in R

## Tutor & Student Assistant

2015 – 2020

University of Applied Sciences Harz, University of Osnabrück

*Wernigerode, Osnabrück*

- Supported lecture preparation and led exercise seminars across a range of courses, including Data Ethics, Statistics, Computational Data Analysis, Bayesian Data Analysis, General Psychology, and Experimental Psychology

## Research Assistant

2018 – 2019

Quantitative and Qualitative Healthcare

*Produkt+Markt GmbH, Osnabrück*

- Conducted qualitative and quantitative market research in the healthcare sector
- Responsibilities included coding qualitative questionnaires, descriptive data analysis, and preparing presentations and reports

## Project Member – Student Skills Matching Platform

2018

University of Applied Sciences Harz

- Contributed to the development of a platform for matching students based on skills; carried out a needs analysis and led the conceptual design of the matching system

## Internships

**2017** Qualitative Market Research in Healthcare, Ipsos GmbH, Hamburg

**2016** General Psychology and Methodology (PI: Prof. Dr. Claus-Christian Carbon), University of Bamberg

## EDUCATION

### Doctorate in Computational Statistics

2026

TU Dortmund University, Dortmund, Germany

*Simulation-based expert prior elicitation: Method and software development*

- Doctoral thesis at SimTech / University of Stuttgart and TU Dortmund University
- Awarded magna cum laude

### M.Sc. in Cognitive Science

2020

University of Osnabrück, Germany

- Majors: Cognitive modelling & Artificial intelligence

- Graduated with distinction

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## **B.Sc. in Business Psychology**

2018

University of Applied Sciences Harz, Wernigerode, Germany

- Majors: Market research & Consumer behaviour
- Graduated with distinction

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## **Marketing Communications Specialist**

2014

Vocational training certified by IHK (Chamber of Industry & Commerce)

*Dresden-Informatik GmbH, Dresden, Germany*

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## **TEACHING & THESIS SUPERVISION**

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### **Master Seminar on Multilevel Modelling**

2023 – 2024

- Target audience: Master students in Data Science, Statistics, and Econometrics
- Introduction to the theory and analysis of multilevel models using R, from both Bayesian and frequentist perspectives
- Language of instruction: English

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### **Programming Course: Introduction to Python**

2023 – 2025

- Target audience: Master and Bachelor students in Data Science, Statistics, and Econometrics
- Fundamentals of Python, documentation with Sphinx, testing with Pytest, and version control with Git and GitHub
- Language of instruction: English, German

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### **Supervision of Theses**

2020 – 2025

- B.Sc. Analysis of different initialization approaches for hyperparameter optimization with mini-batch stochastic gradient descent: A simulation study · TU Dortmund
- M.Sc. Sensitivity analysis and performance evaluation of varying upper thresholds for discrete likelihoods · TU Dortmund
- B.Sc. The influence of response scales on the knowledge gain of underlying cognitive mechanisms: The role of uncertainty and truth perception in the Truth Effect · Philipps-University Marburg
- B.Sc. Empirical test of core assumptions of the Referential Theory: Influence of repetition on perceived coherence · Philipps-University Marburg
- B.Sc. Identification and testing of relevant psychological factors on truth judgments and the truth effect according to the Referential Theory · Philipps-University Marburg
- B.Sc. Truth Effect: The role of the response scale in truth effect designs with short delay · Philipps-University Marburg

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## **PUBLICATIONS & TALKS**

**2026 Bockting, F.** Simulation-based expert prior elicitation: Method and software development. Doctoral Thesis. TU Dortmund University.

**2025 Bockting, F.** Invited Talk: *Predictive Prior Elicitation: State of the Art &*

*Current Challenges*, Workshop on Bayesian Modelling, Lund University

- 2025** **Bockting, F.** & Bürkner, P. C. **elicitio**: A Python Package for Expert Prior Elicitation. *arXiv preprint*
- 2025** **Bockting, F.**, Radev, S. T., & Bürkner, P. C. Expert-elicitation method for non-parametric joint priors using normalizing flows. *Statistics and Computing*, 35(5), 132.
- 2024** **Bockting, F.**, Radev S. T., & Bürkner P. C. Contributed talk: Normalizing Flows for Simulation Based Expert Prior Elicitation. MathPsych
- 2024** **Bockting, F.**, Radev S. T., & Bürkner P. C. Contributed talk: Simulation Based Prior Knowledge Elicitation for Parametric Bayesian Models. ISBA
- 2024** **Bockting, F.**, Radev, S. T., & Bürkner, P. C. Invited talk: Simulation Based Prior Knowledge Elicitation for Parametric Bayesian Models. Bayes@Lund
- 2024** **Bockting, F.**, Radev, S. T. & Bürkner, P. C. Simulation-based prior knowledge elicitation for parametric Bayesian models. *Scientific Reports* 14, 17330.
- 2023** Heck, D. W., & **Bockting, F.** Benefits of Bayesian model averaging for mixed-effects modeling. *Computational Brain & Behavior*, 6(1), 35–49.
- 2023** van Doorn, J., ..., **Bockting, F.** & Aust, F. Bayes factors for mixed models: A discussion. *Computational Brain & Behavior*, 6(1), 1–13.
- 2021** **Bockting, F.** & Heck, D. W. Measuring Individual Differences in the Truth Effect: A formal analysis. Fast Talk at MathPsych
- 2021** Stephan, A., ..., **Bockting, F.**, ... Nachwort. In Turing A. M. *Computing Machinery and Intelligence. Können Maschinen Denken?* (pp. 131–201). Reclam.

## WORKSHOPS & COURSES

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### 2026

- Introduction to cybersecurity, FITech, University of Turku
- Introductory penetration testing and security assessment, FITech, University of Jyväskylä
- Developing Secure Software, OpenSSF, Linux Foundation

### 2024

- Copyright for Computer Programs & Software, TU Dortmund University
- Research Software Engineering Summer School, Karlsruhe Institute of Technology (KIT)

### 2023

- Theory of Science, Prof. Dr. Zoglauer, University of Stuttgart
- Foundations of Deep Learning for the Social Sciences, University of Tübingen
- The Statistics Wars and Their Casualties (online seminar series), Prof. Dr. Deborah Mayo, Prof. Dr. Roman Frigg, & Prof. Dr. Margherita Harris

### 2022

- Summer School on Advanced Bayesian Data Analysis with Stan, Dr. Bruno Nicenboim, University of Potsdam
- Interval Hypothesis Testing, Prof. Dr. Daniël Lakens, University of Eindhoven
- Robust Cognitive Bayesian Analysis, Prof. Dr. Jeffrey N. Rouder, University of California
- Bayesian Evaluation of (informative) Hypotheses, Prof. Dr. Herbert Hoijtink, University of Utrecht

## 2021

- Multinomial-Processing-Tree Modeling – Foundations and Recent Advances, Prof. Dr. Edgar Erdfelder & Prof. Dr. Daniel Heck, University of Mannheim
- Single- vs. Dual-Process Theories, Prof. Dr. Mandy Hütter, University of Tübingen
- Introduction into Bayesian Statistics, Prof. Dr. Daniel Heck, Philipps-University Marburg

## CONFERENCES & EVENTS

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- MathPsych – Society for Mathematical Psychology · Tilburg
- ISBA – International Society for Bayesian Analysis · Venice
- DGP – German Society for Psychology · Leipzig
- EGU – European Geosciences Union · Vienna
- Bayes@Lund – Lund

### Upcoming

- CITCON:AI Europe · Helsinki
- Secure System Demo Day · Espoo
- StanCon – Stan Conference · Uppsala
- Nordic-RSE Conference · Tromsø

## ENGAGEMENT

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- Carpentries lesson maintainer (“HPC workflow management with snakemake”)
  - Mentor in Google Summer of Code 2026 (“Parallelizing loo package”)
  - Co-instructor for a tutorial at StanCon 2026 (“Contributing to Stan: A Developer’s Guide to the Core, Interfaces, and First Contributions”)
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