

INAN BOSTANCI

I am a PhD candidate in Mathematics and Computer Science at Freie Universität Berlin, conducting my research at the Zuse Institute Berlin. My work focuses on developing hybrid modeling frameworks that combine agent-based and compartmental (ODE) models to simulate infectious disease spread, integrating real-world mobility, weather, and policy data. I am particularly interested in how individual behavior, mobility, and interventions interact to shape large-scale population health dynamics. My background bridges social science, statistics, and computational modeling, and I enjoy building data-driven models that inform public health forecasting, policy evaluation, and complex systems research.

EDUCATION

- 2026
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2022

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PhD (Dr. rer. nat.) in Mathematics and Computer Science

Free University of Berlin

Germany

· Researching hybrid agent-based and ODE models for infectious disease spread, focusing on scalability, realism, and data integration

· Supervised by Dr. Tim Conrad

2022
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2020

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MSc Methodology and Statistics in the Behavioral, Biomedical and Social Sciences (graduation in June 22)

Utrecht University

Netherlands

· Thesis: Linking traffic loop sensors and administrative data to predict nationwide traffic, supervised by Dr. Peter Lugtig and Yvonne Gotten

2020
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2015

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BA Sociology

Leipzig University

Germany

· Thesis: The effect of social networks on labour market outcomes, supervised by Dr. Holger Lengfeld

EMPLOYMENT HISTORY

today
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2022

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Researcher

Zuse Institute Berlin

Germany

· Developed a hybrid agent-based and ODE simulation framework, balancing scalability, accuracy, and data fidelity for COVID-19 spread, integrating real-world mobility and weather data

· Applied a deep learning-based neural parameter calibration approach to fit complex ODE models to real-world COVID-19 time series data with custom loss functions and uncertainty quantification techniques

· Led model validation and parameter fitting pipelines to compare simulated vs. empirical case curves

· Contributed to national COVID-19 forecasting via the MODUS-COVID project in collaboration with TU Berlin, delivering simulation-based policy briefs to German health authorities

2022
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2021

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Intern Data Science/Methodology in Mobility Research

DaCiMob

Statistics Netherlands (CBS)

· Designed and implemented a data linkage framework integrating population registry, traffic sensor data, and geospatial infrastructure to model national rush hour patterns

· Used CBS's secure big data environment for scalable preprocessing and modeling

· Delivered Jupyter notebooks for traffic prediction and anomaly detection to CBS analysts

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CONTACT

ie.bostanci@gmail.com

in LinkedIn

inan-bostanci.netlify.app

SOFTWARE SKILLS

Python	
R	
Java	
Julia	
SPSS	
Stata	
Mplus	
MS Office	

LANGUAGE SKILLS

English	
German	
Turkish	
French	

Last updated on 2025-06-21.

2020
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2019

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Research Assistant/Intern in T-NAMSE project

Institute for Public Health

Charité - Berlin University of Medicine

· Supported national research project on rare disease diagnostics with data management, analysis, and visualization

· Attended internal colloquia on public health research methodology

2020
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2017

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Student Assistant

School of Media, Communication and Sociology

University of Leicester

· Research project Far-Right Environmental Risk Communication in the European Parliament

· Collecting, monitoring and qualitative coding of data and parliamentary speeches of the EU parliament and of newspaper articles

2019

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Intern Behavioural Policy and Disruptive Technology

Ministry of Trade

Ankara, Republic of Turkey

· Assistance in Turkeys first Nudge Unit (applying behavioural science in public policy)

· Attendance in international meetings to implement blockchain technology in international trade

· Literature reviews

2019
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2018

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Student Assistant Chair of Institutions and Social Change

Institute for Sociology

Leipzig University

· Data analysis and visualisation, data research, literature research

· Managing the learning management system

· Proof-reading and revising in English and German

2018
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2017

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Student Assistant in EU-funded SOLIDUS (Horizon 2020, grant agreement #649489)

Institute for Sociology

Leipzig University

· Assisted in authoring of the “European Solidarity in Times of Crisis”-monograph

· Preparing and analysing reports

· Conducting and evaluating focus group meetings, interviews and national seminars

2017
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2016

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Teaching Assistant Methods and Statistics

Institute for Sociology

Leipzig University

· Tutoring and marking students homework in statistics