Silke K. Kaiser

PhD Student · Applied Machine Learning · Berlin School of Economics

Hertie School, Friedrichstraße 180, 10117 Berlin, Germany

s.kaiser@phd.hertie-school.org | silkekaiser.github.io/ | github.com/silkekaiser/ | www.linkedin.com/in/silke-kaiser

Education

Berlin School of Economics / Hertie School — *Berlin, Germany*
PhD — *2020 - 2026*
- Faculty: Data Sciences Lab & Center for Sustainability
- Topic: Machine Learning for Spatio-Temporal Urban Traffic Estimation
- Advisor: Prof. Lynn Kaack and Prof. Carlos Lima Azevedo

Technical University of Denmark — *Copenhagen, Denmark*
Visiting PhD — *2024*
- Department of Technology, Management and Economics: Intelligent Transportation Systems

Université Panthéon-Sorbonne & Ca'Foscari — *Paris, France & Venice, Italy*
M.Sc. Models and Methods of Quantitative Economics — *2018 - 2020*
- Erasmus Mundus Master
- Graduated top of my class

SciencesPo — *Paris, France*
M.Sc. Economics — *2018 - 2020*
- Graduated cum laude

Westfälische Wilhelms-Universität — *Münster, Germany*
B.A. Political Sciences and Economics — *2013 - 2017*
- Erasmus stay at SciencesPo Aix-en-Provence, France
- Focus in Econometrics

Teaching Experience

Introduction to Python — *Hertie School, Berlin*
Lecturer — *Spring 2026*

Applied Econometrics — *Humboldt-University, Berlin*
Teaching Assistant — *Fall 2024 & 2023 & 2022*

Introduction to Econometrics — *Humboldt-University, Berlin*
Teaching Assistant — *Spring 2025 & 2024 & 2023 & 2022*

Time Series Econometrics (PhD level) — *Humboldt-University, Berlin*
Teaching Assistant — *Fall 2021*

Professional Experience

2025-2026 **Hertie School**, Berlin (Germany), Research Assistant Data Science
2019-2020 **SciencesPo**, Paris (France), Research Assistant Econometrics
2018 **Institute for Ecological Economic Research (IÖW)**, Berlin (Germany), Sustainability Research Internship
2017 **Miller & Meier Consulting**, Berlin (Germany), Consulting Internship
2016 **German Embassy in South Africa**, Pretoria (South Africa), Economic Advisory Internship

Publications

Published

Kaiser S.K.,, Klein N., Kaack L.H. From counting stations to city-wide estimates: data-driven bicycle volume extrapolation. Environmental Data Science. 2025;4:e13. https://doi.org/10.1017/eds.2025.5

Chevance, G., Nieuwenhuijsen, M., Braga, K., Clifton, K., Hoadley, S., Kaack, L. H., **Kaiser S.K.**, Lampkowski M., Lupu I., Radics M., Velázquez-Cortés D., Williams S., Woodcock J., Tonne C. Data gaps in transport behavior are bottleneck for tracking progress towards healthy sustainable transport in European cities. Environmental Research Letters. 2024 19.55 051002 https://doi.org/10.1088/1748-9326/ad42b3

In Review

Kaiser, S. K., Rodrigues, F., Azevedo, C. L., Kaack, L. H. (2025). Spatio-Temporal Graph Neural Network for Urban Spaces: Interpolating Citywide Traffic Volume. arXiv preprint arXiv:2505.06292. https://doi.org/10.48550/arXiv.2505.06292 (Under Review at Expert Systems with Applications)

In Preperation

Kaiser S.K. (2026). Sensor Placement for Urban Traffic Interpolation: A Data-Driven Evaluation to Inform Policy. arXiv preprint arXiv:2601.10747. https://arxiv.org/abs/2601.10747

Awards, Fellowships, & Grants

2022-2026	**Friedrich Ebert Stiftung**, Scholarship PhD	*75.000€*
2020-2022	**Berlin School of Economics**, Scholarship PhD	*29.000€*
2018-2020	**German Academic Exchange Service (DAAD)**, Scholarship Master	*37.000€*
2014-2020	**Studienstiftung des deutschen Volkes**, Scholarship Bachelor & Master	*17.000€*

Presentations

Invited Talks (selected)

Spring 2026. **Applied Machine Learning Days**, Sensor Placement for Urban Traffic Interpolation: A Data-Driven Evaluation to Inform Policy, Lausanne, Switzerland

Fall 2025. **ECML-PKDD SoGood Workshop**, Spatio-Temporal Graph Neural Network for Urban Spaces: Interpolating Citywide Traffic Volume - Recipient of Best Paper Award, Porto, Portugal

Spring 2025. **Women in Big Data**, Tackling Climate Change with AI, Berlin, Germany

Summer 2024. **What Works Climate Solutions Summit**, From Counting Stations to City-wide Estimates: Data-driven Bicycle Volume Extrapolation, Berlin, Germany

Summer 2024. **hEART Conference**, From Counting Stations to City-wide Estimates: Data-driven Bicycle Volume Extrapolation, Helsinki, Finland

Fall 2023. **Data Science Lab Hertie Brownbag**, Graph Neural Networks in Urban Traffic Estimations, Berlin, Germany

Summer 2023. **Berlin School of Economics Summer Meeting**, Big Data Approaches for Addressing Data Gaps in Transport, Berlin, Germany

Spring 2023. **ICLR Workshop Tackling Climate Change**, Predicting Cycling Traffic in Cities: Is Bike-sharing Data Representative for the Cycling Volume?, Kigali, Rwanda

Spring 2023. **Active Travel Utilization Data Workshop**, Big Data Approaches for Addressing Data Gaps in Transport, Online

Spring 2022. **Berlin School of Economics Summer Meeting**, Big Data Approaches for Addressing Data Gaps in Transport, Berlin, Germany

Workshops (Organized)

Fall 2025. **Big Data for Cycling in Cities** Hertie School, Berlin, Germany

Spring 2023. **Machine Learning in Economics** Humboldt-University, Berlin, Germany

Workshops (Participated)

Summer 2023. **BIFOLD Summer School** Berlin, Germany

Spring 2023. **Active Travel Utilization Data workshop** Online

Languages

German (Native), English (Near native), French (Fluent), Italian (Beginner), Spanish (Beginner).

Coding

Python (Expert), R (Advanced), SQL (Proficient), Julia (Advanced), STATA (Advanced).

Outreach & Professional Development

Outreach

05/09/24 **Podcast, Environment Variables**, Academic Forefronts, https://open.spotify.com/episode/0OAjyEVqwKgtUQbG2o3uTR?si=a8b36ae81450469d&nd=1&dlsi=ccdddb223a634c7c

08/09/23 **Opinion Piece Article, CATALYSE**, Pedalling Towards a Greener Future, https://catalysehorizon.eu/post/pedalling-towards-a-greener-future-the-impact-of-cycling-and-active-transport-on-climate-change-and-public-health/

Service

2021 **Berlin School of Economics**, PhD Selection Committee

Peer Review

Transport Research Part A
ICLR 2023

Master's thesis supervision

Aditya Narayan Rai, 2025
Miriam Runde, 2025