Dr. Philipp Schaz

Data Scientist and Economist

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SKILLS

- Programming (Python, R, VBA, SQL)
- Advanced Machine Learning (scikit-learn, XGBoost)
- Deep Learning (OpenCV, Keras, TensorFlow, PyTorch)
- Causal Inference & Causal Machine Learning (A/B Testing, Difference-in-Differences, PSM, Causal Forests, Meta-Learners, Uplift Modeling)
- Advanced Statistics and Econometrics (NumPy, pandas, statsmodels)
- Data Warehousing & SQL Analytics
- Data Engineering (REST APIs, FastAPI, PySpark)
- Big Data & Lakehouse Architectures (Databricks, AWS, Spark)
- MLOps (MLflow, Docker)
- Workflow Orchestration & Automation (AWS Step Functions, Python WAF)
- Cloud & Deployment (AWS, Streamlit, regulated environments)
- Language Processing, LLMs & Web Scraping (Hugging Face, Beautiful Soup, NLTK, RAG)
- Data Visualization & BI (Matplotlib, ggplot, Seaborn, Plotly, PowerBI, Tableau)
- Linux & Bash
- Version Control (Git, GitHub)
- AWS Cloud Practitioner (Certification)

SUMMARY

I'm a freelance Data Scientist and PhD Economist with over 10 years of experience in data analysis, econometrics, applied machine learning, and strategic communication. My background combines rigorous academic research with hands-on projects in business and public policy — giving me a unique perspective on how to turn complex data into actionable insights.

EXPERIENCE

AI Expert (PhD)
Mercor, San Francisco, USA
September 2025 – December 2025

- Develop, evaluate and optimize advanced AI and LLM-based systems for economic decision-making, including benchmarking, reasoning evaluation, reliability testing and systematic error analysis.
- Improve model accuracy and domain-specific performance through prompt engineering, RAG/LLM optimization techniques and deep research rubrics.

Data Scientist
Sparkassen Rating und Risikosysteme, Berlin, Germany
April 2025 – August 2025

- Build predictive models to identify attrition risks among young customers and collaborate with the national banking association to design a data-driven retention strategy (Python, SQL, Spark, Power BI).
- Develop and evaluate XGBoost-based models for automated customer targeting across 40 million accounts, including KPI design and causal impact measurement using A/B-Testing and Meta-Learners (Databricks).

Data Scientist
Datascientest, Paris, France
June 2024 - Oct 2024   Link to Project

- Develop deep learning and classical ML models (CNNs, SVM, XGBoost) to detect lung diseases from chest X-ray images using TensorFlow and PyTorch.
- Deploy a Streamlit-based web application on AWS enabling real-time predictions and Grad-CAM visualizations, using FastAPI and Step Functions.

Senior Economist for Data Science
Federal Ministry of Labor and Social Affairs, Berlin, Germany
Dec 2020 – Sep 2023

- Develop and deploy machine learning and econometric models to support data-driven policy decisions on pensions and labor markets, using administrative data from 60 million individuals (R, Python, PSM).
- Design structural time series and demographic models to forecast long-term pension outcomes amounting 360 billion EUR annually over a 50-year horizon.
- Communicate analytical insights to stakeholders across disciplines, translating results into actionable policy recommendations (Tableau, ggplot).

- German (native)
- English (C2)
- Spanish (C1)
- Greek (C1)
- French (B1)

SOFT SKILLS

- Problem solving
- Communication
- Emotional intelligence
- Resourcefulness
- Enthusiasm
- Independence
- Curiosity
- Critical thinking
- Empathy
- Creativity
- Humor
- Flexibility
- Team orientation
- Public speaking

AWARDS

- "Summa cum laude" for highest PhD grade
- Publication in top 3 academic journal
- Full scholarships from FES and DFG
- Award for Outstanding Academic Performance in undergraduate

HOBBIES

- Travel and backpacking
- Outdoor sports (hiking, kayaking, cycling)
- Football
- Yoga & meditation
- Science
- Politics
- Philosophy

Consultant for Financial Analysis
Renewables Academy (RENAC), Berlin, Germany
Mar 2020 - Nov 2020

- Develop financial models to evaluate renewable energy projects and design the "Sustainable Finance" course, emphasizing data-driven analysis of international climate finance, risks, and market conditions (R, Power BI).

Research and Teaching Associate
Humboldt University of Berlin, Germany
Oct 2016 - Oct 2018

- Lead research in Financial Economics using advanced statistical analysis and data visualization, while teaching data-driven methods and supervising empirical master theses with a focus on causal inference (A/B Testing, DiD).

EDUCATION

Data Scientist
University of Paris I: Panthéon-Sorbonne, France
June 2024 – Oct 2024

- Complete 660 hours of full-time training in advanced machine learning (Python: NumPy, pandas) and data visualization (Matplotlib, Tableau, Plotly).
- Build classical ML models (SVM, Random Forest, XGBoost, ensemble methods) and advanced deep learning models (CNNs, transfer learning, NLP, recommender systems, graph algorithms) using Keras, TensorFlow, PyTorch, OpenCV, Hugging Face, NetworkX.
- Develop end-to-end data pipelines and MLOps workflows (SQL, REST APIs, PySpark, MLflow, Docker) and earned AWS Cloud Practitioner certification.

PhD in Economics
Humboldt University of Berlin, Germany
Oct 2013 - Dec 2019   🌐 Link to Papers

- Apply advanced statistical and causal methods (DiD, PSM, IV), leading to publication in a top-3 journal.
- Integrated large-scale datasets from seven global sources into a relational SQL database, modeling 2 million credit observations to analyze effects of global banking crises on firm performance.
- Automated data pipelines with Python-based workflow frameworks (WAF, Python, R), ensuring reproducibility and efficiency, and showed that geographically diversified banks stabilize loan supply by 7.6% during crises.

Visiting Researcher
University of California at Berkeley, USA | **Dec 2017 - May 2018**

MSc in Economics
Barcelona Graduate School of Economics, Spain | **Oct 2012 - Aug 2013**

MSc in Political Economy
London School of Economics, UK | **Oct 2011 - Aug 2012**

BSc in Economics
Universität Konstanz, Germany | **Oct 2007 - Mar 2011**