

Philipp Petermeier

Software & ML Engineer | Full Stack Developer

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About

I'm a Software Engineer and Full Stack Developer, fascinated by systems of all kinds: biological, social, technological. How they work, why they fail, how they solve information flow and how we might design better ones.

Since my B.Sc., I'm interested in data, models, and software engineering, ranging from data science and machine learning to full stack web development and cloud computing.

I work best with researchers—clarifying ideas, focusing on concrete use cases, and making results accessible.

Experience

Software Engineer (Founding Team)

Feb 2025 - Present

Backwelltech, Berlin, Germany

First software engineer in Berlin office, working directly with ML specialists to bring research into production. Built the engineering foundation from scratch and took on broad infrastructure and operations responsibilities as the company grew.

- Established development standards where none existed: version control workflows, deployment pipelines, tech stacks, and cloud infrastructure
- Own company-wide technical infrastructure: DNS, API key management, cloud accounts, and system administration
- Built automation tooling for cross-functional teams, enabling marketing and operations to self-serve workflows
- Evaluated and integrated AI-assisted development tools, becoming the team's technical resource for their adoption
- Sole owner of a product initiative from concept through deployment, maintenance, and iteration based on user feedback

Full Stack Development DevOps Cloud Services Docker Supabase n8n

Intern and Working Student

Feb 2022 - Mar 2024

Fraunhofer IEE, Kassel, Germany

Developed a scientific Python package to implement a reinforcement learning environment for electricity trading. Design, implementation and benchmarking of model paradigm fitting data structures and algorithms ensuring optimal runtime performance. Took over responsibilities in data modeling, ETL pipeline design, database deployment, and HPC cluster orchestration.

Data Science Reinforcement Learning Energy Systems Python HPC

Education

B.Sc. in Business Information Systems

Oct 2018 - Mar 2024

Technische Hochschule Mittelhessen

Final Grade: 2.2 (78%) | 210 CP (7 Semesters)

Thesis: "A Deep Reinforcement Learning Environment for the Limit Orderbook Intraday Electricity Market: Development and efficient Implementation" | Grade: 1.2 (92%)

Award: Winner of Karl-Heinz Lust Innovation Award 2024 (Digital Economy / Industry 4.0 / AI)

Data Science

Reinforcement Learning

Machine Learning

Data Engineering

Formal Modeling

Technical Skills

Python Ecosystem

Python (Advanced)

PyTorch & Keras

NumPy & Pandas

scikit-learn

Notebooks (Jupyter, Marimo)

Matplotlib, Seaborn & Plotly

Other Technologies

JavaScript/TypeScript

React & Next.js

PostgreSQL & MongoDB

Git & CI/CD

Systems Architecture

R & Julia

Docker & Cloud Services

HPC & Distributed Computing

Interests

- Data Science and Machine Learning
- Modeling of Processes and Data
- Graphs and Networks
- Human-AI Collaboration
- Game and Decision Theory

- Reinforcement Learning
- Evolutionary Algorithms
- Multi-Agent Systems
- AI Policy, Safety and Ethics
- Market and Mechanism Design

Languages

German Native

English Fluent