



JAN ZERNISCH

Freelance Software Engineer

(+49) 177 6889291 · jan@izernisch.com

ABOUT ME

 I'm Jan, passionate software engineer with focus on Python and Ruby. Having a background in mathematics, I'm also interested in Machine Learning and Data Science.

I have experience with larger event-based microservice architectures as well as with monolithic frameworks like Django or Ruby on Rails. In addition to software design and architecture, I am also interested in agile methods and have also worked as an agile coach for some time, which helps me to think across roles and to build bridges in many areas. High quality is very important to me, which includes not only good design but also testing, which is why I like developing test-driven (TDD).

SKILLS

Languages: Ruby · Python · JavaScript · TypeScript

Frameworks/Libraries: Flask · Django · NumPy · Pandas · scikit-learn · Tensorflow · Ruby On Rails · Sinatra · React

Technologies/Tools: PostgreSQL · RabbitMQ · InfluxDB · Docker · Git · Github · Gitlab

Other: TDD · CI/CD · DDD · Architecture · Machine Learning · Mathematics · Scrum · Kanban

EXPERIENCE



node.energy GmbH

March 2023 – present



opti.node - GreenTech SaaS (Backend & API-Development)

opti.node is B2B SaaS software that helps operators of renewable energy plants to meet their regulatory obligations and implement digital business models. The regulations in this domain are very complex in Germany, which is reflected in the highly complex business

logic of the software. In order to do justice to this, a domain-driven design approach was applied and interdisciplinary collaboration was carried out in close coordination between developers, business analysts and other stakeholders.

Technologies: Python · Django REST-Framework · Domain Driven Design · PostgreSQL · Docker · Github Actions · Microsoft Azure · Microsoft Graph API · openpyxl · Excel



PwC Deutschland GmbH, Düsseldorf

March 2020 – September 2022

Chatbot Platform (Frontend & Backend Development)

An internal chatbot platform was developed that makes it possible to provide a new chatbot for a given context with minimal effort. Contexts were, for example, Human Capital (PwC Germany) or Learning and Development (overarching project of various European PwC country organizations). For PwC Germany, the platform served 12,000+ users and, thanks to NLP and machine learning methods, was able to respond flexibly and adequately to a wide variety of user inquiries.

In addition to the core functionality, it was also important to be able to flexibly connect interfaces for different channels (different messenger services, e-mail or ticket systems). In addition, a user interface was developed that gives the respective colleagues in the specialist departments the opportunity to train the chatbot with new example questions, to evaluate the chatbot performance and to be able to correct the chatbot afterwards.

Technologies: Python · RASA · Flask/Flask-RESTX · Django · React JS · TypeScript · SQLAlchemy · Alembic · PostgreSQL · Docker · Kubernetes · Gitlab CI/CD

Agile Transformation (Agile Coaching)

As a member of the “Team Zero” transformation team, which reported directly to the CIO, I supported the Technology & Transformation department through organizational development and agile coaching. The aim was to align the organization based on value streams and to promote business agility. We helped to set up and set up cross-functional teams, coached them and the leadership, introduced OKRs at all levels and organized the work on Kanban Flight Levels.



Valtech Mobility GmbH, Düsseldorf

Januar 2019 – Februar 2020

“Project e.GO Mobile” (Agile Coach & Product Owner)

The connected car backend, a mobile app and a web application for service workshops was developed for the Aachen-based e-car manufacturer e.GO. In addition to coaching the development team at Valtech Mobility GmbH, the successful cooperation of various other service providers involved had to be coordinated.



InVision AG, Düsseldorf

July 2011 – December 2018

InVision offers the product *injixio*, a leading SaaS workforce management solution for contact centers, which almost completely automates the very complex personnel planning process that is customary there. Here I was involved in various sub-projects, including:



Automatic forecasting of call volumes in contact centers (frontend & backend development)

The core component of *injixio* is [injixio Forecast](#), which, based on historical call data using machine learning methods, can precisely and fully automatically predict call volumes, on which optimal staffing is then calculated, which on the one hand takes service level agreements into account and on the other hand ensures them that employees are not overloaded.

Technologies: Ruby · Sinatra · Rails · Python · Flask · Numpy/Pandas · Tensorflow · R · React JS · PostgreSQL · Redis · RabbitMQ · Docker · Kubernetes · Jenkins · Github



Automated handling of vacation requests (frontend & backend development)

Development of a solution for the automated acceptance and rejection of vacation requests in contact centers, based on heuristically calculated shift schedules.

Technologies: Ruby · Rails · PostgreSQL · Go · Backbone JS · Ember JS · RabbitMQ · Docker · Kubernetes · Jenkins · Github



Algorithms for call center forecasting (R&D, backend development)

Design of algorithms for forecasting, which later flowed into the first version of *injixio Forecast*.

Technologies: Ruby · C · C++ · ALGLIB



Institute for Discrete Mathematics, Bonn

April 2009 – October 2010



VLSI - Very Large Scale Integration (R&D, backend development)

Conception and implementation of algorithms for the design of VLSI microchips, in particular for the "port assignment problem", which involves arranging the ports of a chip component after "placement" (determining the component positions) in such a way that that the component can be optimally wired during the subsequent "routing". The project was created as part of a cooperation between the University of Bonn and IBM.

Technologies: C · C++ · CPLEX · SCIP · Tcl

EDUCATION

 **Rheinische Friedrich-Wilhelms-Universität, Bonn – *Mathematics, Diploma***

October 2003 – January 2011

- Mathematics, minoring in Computer Science
- Grade : "sehr gut" (excellent)

 **Coursera, Stanford Online/DeepLearning.AI – *Machine Learning Specialization***

January 2023 – February 2023

- Supervised Machine Learning: Regression and Classification
- Advanced Learning Algorithms
- Unsupervised Learning, Recommenders, Reinforcement Learning