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data mining · machine learning · artificial intelligence · big data

I am a computer scientist specializing on algorithms for data analysis by training, and a generalist by nature. As a freelance data scientist I help my clients with implementing data-driven innovation.

Focus

Data-driven Innovation – end-to-end

To make data-driven innovation succeed, I work with my clients in all phases of a data science project – including business case discovery, structuring of requirements, selection appropriate algorithms and tech stacks, and finally deployment and evaluation in production.

Full Stack Data Science

Full stack refers to the software engineer who is familiar with both the user-facing side and the backend infrastructure of software. Similarly, the full stack data scientist understands the analytics methods as well as user interaction and infrastructure needed to put it all into practice – a fitting description of my typical role in data science projects. I am especially interested in establishing software engineering best practices in the field of data science.

Pragmatic AI

Artificial Intelligence is currently both overhyped and underrated. We have seen some remarkable progress in AI capabilities, yet many companies struggle to put intelligent systems to work on everyday use cases. Work with me to go beyond the hype and connect business cases to technology – because many valuable, pragmatic cases for self-learning systems are within reach for your enterprise.

Education

- 2012-2016 **Karlsruhe Institute of Technology (KIT)**, *PhD candidate at the Institute of Theoretical Informatics/Parallel Computing Group.*
– **Doktor der Naturwissenschaften** (\approx PhD) *magna cum laude* awarded in June 2016 for the dissertation *Algorithms and Software for the Analysis of Large Complex Networks*
- 2005-2012 **Karlsruhe Institute of Technology (KIT)**, *computer science studies.*
– subjects: algorithm engineering, software engineering, compiler construction, parallel programming, advanced object-oriented programming, physics, sociology
– **Diplom** (\approx Master's degree)

Career

- 2016 - **Freelance Data Scientist.**
– contract roles in Data Science - see section Projects & Roles
- 2015 **Visiting Researcher**, *University of Illinois, Chicago / Clemson University.*
– 2 month research visit funded by a grant from the Karlsruhe House of Young Scientists
- 2012 - 2016 **Researcher**, *at the Institute of Theoretical Informatics/Parallel Computing Group (Prof. Henning Meyerhenke), KIT.*
– research focus: algorithm engineering for the analysis of large complex networks
- 2007 - 2010 **Student Research Assistant**, *at the Institute of Theoretical Informatics, research group Algorithmics I (Prof. Dorothea Wagner), KIT.*
– assistance in algorithmics research and scientific software development

Projects & Roles

- Oct 2020 - **Data Scientist / Software Engineer**, *Henkel.*
machine learning Python DevOps MLOps data engineering
– sustainability & life cycle assessment
– data pipelines & machine learning solutions for the reduction of waste and environmental footprint
- Feb - Apr 2021 **Data Science Trainer**, *Wild Code School.*
AI machine learning deep learning Python TensorFlow
– authorship, teaching & coaching for the artificial intelligence curriculum - computer vision, anomaly detection, sequence models, time series forecasting, reinforcement learning
- Apr - Oct 2020 **AI Consultant/Architect**, *Chami Consulting / SysDICE GmbH.*
artificial intelligence NLP conversational AI TensorFlow Rasa SpaCy
graph databases neo4j
– enabling the adoption of model-based systems engineering with artificial intelligence
– consulting, solution design and software architecture for the MBSE tool SysDICE
– extraction of structured information from text

Sep 2017 - **Data Scientist, Point 8 (point-8.de)** .

Python

machine learning

time series

deep learning

predictive maintenance

- **research and development** on machine learning in industrial applications, e.g. time series analytics, time series forecasting and anomaly detection
- for **Deutsche Bahn**: analysis of graph-, geo- and time series- data from rail traffic; applying simulation to predictive analytics
- for **client in mechanical engineering sector**: data mining and predictive maintenance on sensor data from IoT applications

Apr 2018 - **Data Science Trainer, Point 8 for clients including ExperTeach, Innogy, Bayerischer Rundfunk.**

Python

big data

statistics

machine learning

deep learning

AWS

- concept and development of a modular data science curriculum for industry trainings
- taught > 25 courses from beginner to advanced level

Nov 2018 - **Data Scientist, denkbares GmbH (denkbares.com) for Fahrzeugwerk KRONE**
Jun 2019 (www.krone-trailer.com), analytics application.

Python

big data

dashboards

analytics application

DevOps

plot.ly Dash

- design, development and deployment of a data analytics application for insight into customer demand and production process

Feb 2018 - **Data Scientist, PTV Group (ptvgroup.com)**, machine learning on traffic data.

May 2018

Python

Spark

big data

geodata

time series

machine learning

MLOps

- applying machine learning to time series and geodata from road traffic analysis
- from classification model engineering to a deployment strategy in a cloud environment.

Oct 2017 - **Data Scientist, Deutsche Telekom**, multiple data science projects.

Apr 2018

Python

machine learning

predictive analytics

process mining

big data

Spark

- supporting Deutsche Telekom's think tank dedicated to improving customer service through advanced analytics
- data mining, reporting and data visualization
- machine learning for predictive analytics and root cause analysis
- process mining

Mar 2017 - **Data Scientist, Boehringer Ingelheim**, data-driven measurement of marketing efforts.

Jun 2017

Python

big data

- developing a prototype for data-driven measurement of global marketing campaign performance across channels

2012 - 2016 **Software / Algorithm Engineer, Karlsruhe Institute of Technology, NetworKit.**

Python

C++

machine learning

parallel computing

- architecture, implementation, algorithm engineering, optimization & maintenance of an open-source library for efficient parallel graph/network analysis algorithms

Speaking

- 2019 **Machine Learning for Time Series Forecasting**, at *data2day conference Ludwigshafen*.
- 2019 **Scaling Data Analysis and Machine Learning with PySpark**, at *buildingIoT conference Cologne*.
- 2017 **PyCon.DE Karlsruhe**, *The Python Ecosystem for Data Science: A Guided Tour*.
- 2017 **PyData Warsaw**, *The Python Ecosystem for Data Science: A Guided Tour*.

For academic conference presentations, see my list of publications on DBLP

Training & Teaching

- 2021 **Big Data Analysis - End to End**, *Point 8 / ExperTeach*.
- 2021 **Deep Learning & Artificial Intelligence**, *Wild Code School*.
- 2020 - **Deep Learning with TensorFlow**, *Point 8 / ExperTeach*, x3.
- 2020 - **Big Data Analysis with PySpark**, *Point 8 / Heise iX Trainings*.
- 2020 **Software Engineering**, *Hochschule Fresenius*.
- 2018 - **Big Data Analysis with Python and PySpark**, *Point 8 / ExperTeach*, x9.
- 2020 **Big Data Analysis with PySpark**, at *data2day conference*.
- 2019 - **Data Analysis and Machine Learning with Python**, *Point 8 / ExperTeach*, x6.
- 2020 **Machine Learning for Time Series Forecasting**, at *ML Essentials Heidelberg*.
- 2019 **Advanced Machine Learning**, at *Telekom Technical Security Summit*.
- 2019 - **Advanced Machine Learning**, *Point 8 / ExperTeach*, x2.
- 2018 **Machine Learning with PySpark**, *Point 8 / ExperTeach*, x2.

Volunteering

- 2020 - **Co-Organizer**, *PyData Hamburg*, pydata.org, bi-monthly meetups with talks on innovation with open source data tools.
- 2020 - **Podcast Producer**, *Scientists for Future Podcast*, s4f-podcast.de, conversations with researchers about a sustainable future.
- 2016 - 2017 **Co-Organizer**, *Karlsruhe Machine Learning University Group*.
- 2012 - **Member**, *Chaos Computer Club e.V.*

Bibliography

academic publications [DBLP](#)

Languages

German first language

English bilingual proficiency

Italian limited working proficiency

Spanish limited working proficiency