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data scientist · machine learning engineer

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 in 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.

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 into everyday practice. Work with me to go beyond the hype and connect business cases to technology – because 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 (≈ 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** (≈ Master's degree)

Career

2016 -	**Independent 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 - Jan 2020   **Data Scientist**, *Henkel.*

`predictive analytics` `machine learning` `Python` `DevOps` `data engineering`

– sustainability & life cycle assessment
– data science for the reduction of waste and environmental footprint

Apr 2020 -   **AI Consultant/Architect**, *Chami Consulting.*

`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` `TensorFlow`

– **research and development** on machine learning in industrial applications, e.g. time series analytics 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 analytics 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 > 20 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 geodate 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` `Adobe Data Workbench` `big data`

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

Oct 2016   **Consultant/Software Architect**, *100 Worte (100worte.de)*, design and implementation of sentiment analysis software.

`Python` `natural language processing`

– enabling real-time analysis of natural language for psychological profiling and writing style assistance

2012 - 2016   **Algorithm Engineer/Software Architect**, *Karlsruhe Institute of Technology*, algorithm engineer, software architect, lead developer NetworKit.

`C++` `OpenMP` `Python` `parallel computing` `algorithms`

– NetworKit is a library for high-performance and parallel graph algorithms for data mining and machine learning on complex networks

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

2020	**Software Engineering**, *Hochschule Fresenius.*
2020	**Big Data Analysis with PySpark**, *at data2day conference.*
2020	**Big Data Analysis with PySpark**, *Heise iX Trainings.*
2020	**Deep Learning with TensorFlow**, *x2.*
2020	**Data Analysis and Machine Learning with Python**, *x4.*
2020	**From Scripting to Data Application Engineering**, *at enterPy conference Mannheim.*
2020	**Machine Learning for Time Series Forecasting**, *at ML Essentials Heidelberg.*
2019	**Advanced Machine Learning**, *at Telekom Technical Security Summit.*
2019	**Advanced Machine Learning**.
2019	**Machine Learning for Time Series Forecasting**.
2019	**Machine Learning with Python**.
2019	**(Big) Data Analysis with Python and PySpark**, *x8.*
2018	**Introduction to Data Analysis with Python**.
2018	**(Big) Data Analysis with Python and PySpark**.
2018	**Machine Learning with PySpark**, *x2.*

Volunteering

2020 -	**Co-Organizer**, *PyData Hamburg*, pydata.org, moderation and speaker outreach for bi-monthly meetups .
2020 -	**Podcast Producer**, *Scientists for Future Podcast*, s4f-podcast.de.
2016 - 2017	**Co-Organizer**, *Karlsruhe Machine Learning University Group.*
2012 - 2013	**Founding Member**, *Karlsruhe Python User 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