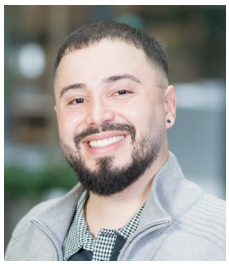
Jan **Seidler**



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Personal Information	
Date of Birth	22. August 1990
Place of Birth	Bonn, Germany
Nationality	German
Family Status	married
Academic Degree	Bachelor of Science, Informatics (Cologne University of Applied Sciences)

Language Skills	
German	Business fluent
English	Business fluent
Spanish	Native language
Russian	Basic knowledge
Turkish	Basic knowledge

Summary

I am a seasoned Fullstack Engineer with strong expertise in co-creation and delivering business value. I have spearheaded the design and development of comprehensive solutions, ranging from AI chatbots to Industrial IoT Dashboards, and Financial and Health Web Applications. My innovative spirit and unwavering curiosity drive me to harness the power of AI alongside my versatile fullstack engineering skills, fostering creative challenge-solving.

I advocate for leveraging collective wisdom and machine intelligence to effectively tackle real-world challenges. I recognise the pivotal role of integrating software, hardware, and AI in advancing human-digital interaction. My paramount objective is to deeply understand my clients' business needs, tirelessly striving to exceed their expectations with tailor-made solutions. My pursuit of innovation is complemented by my steadfast commitment to continuous learning and growth.

Interests & Hobbies

Interests	➢ Passion for AI: "Everything a human can do, AI empowers." ➢ Build bridges between cultures ➢ Fields of studies: Artificial Intelligence, Neuroscience, Neuroinformatics, Informatics, Robotics, Classical and Quantum Physics, Human Behaviour, Resource Based Economy
Hobbies	Dance Salsa, Bachata, and Techno, play piano, fitness, Krav Maga, read literature (most of all books), solve everyday challenges, learn what the curious mind wants, explore AI models and play around with them

Professional Experience

2024 Mar. - 2025 Nov.	**Full-Stack Engineer at Zühlke Engineering AG** *Further Development of Health Platform allmo.ch* ➢ Backend Development with Node.js, TypeScript, NestJS, TypeORM, and MSSQL ➢ Frontend Development with Node.js, TypeScript, and Next.js ➢ Dependency management with npm ➢ Optimise high-performance build system and CI tasks for TypeScript codebases, and scale monorepo with Turborepo ➢ Integration Testing with Jest ➢ E2E Testing with Cypress ➢ Collaborative programming with Git, IntelliJ, and Azure Repos ➢ Continuous integration and deployment (CI/CD) using a Azure Pipelines ➢ Agile planning and execution of tasks according to Scrum and Behaviour-Driven Development ➢ Fix race condition bugs by specifying tests and implementing the fix by means of Test-Driven Development *Data Portal for Publication of Economic Data and Bank Statistics* ➢ Backend Development with Java 17, Spring Boot, and OracleDB ➢ Frontend Development with TypeScript and Angular ➢ Dependency management with Gradle ➢ Application Deployment in Windows Server ➢ Agile planning and execution of tasks according to Scrum ➢ Automate provisioning, configuration management, orchestration, and application deployment with Ansible ➢ Continuous integration and deployment (CI/CD) using a Jenkins server ➢ Enterprise search with Apache Solr ➢ Manage messaging and integration patterns with IBM MQ ➢ Unit Testing with JUnit, Mockito, and AssertJ ➢ Integration Testing with Karma, and migration to Jest ➢ E2E Testing with Cypress ➢ Collaborative programming with Git, IntelliJ, and GitLab
2023 Nov. - 2024 Jan.	**Full-Stack Developer at Randstad Digital Switzerland AG** ➢ Backend Development with Python, PyTorch and ChromaDB ➢ Design and development of an AI chatbot solution using advanced NLP (Natural Language Processing) techniques and machine learning models such as GGUF, GPTQ and GGML ➢ Testing and evaluation of LLMs according to quality of responses and inference response time

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	➢ Documentation and provision of developer guides for third-party providers and end users ➢ Frontend Development of graphical user interfaces (GUIs), based on frameworks such as Streamlit, to simplify interaction with FinLogGPT, and React ➢ Carrying out user research and usability tests to improve the user experience ➢ Monitoring system performance and carrying out performance analyses ➢ Testing, evaluating and optimising chatbot interactions and response times through continuous adjustments and updates ➢ Deploy an application using Elastic Beanstalk and AWS CICD tools with full automation ➢ Write infrastructure as code using AWS CloudFormation ➢ Implement messaging and integration patterns using AWS SQS, SNS & Kinesis
2022 Jan. - 2023 Juli.	**IT Consultant and Full-Stack Developer at SmartConData GmbH** ➢ Backend Development of „FinExpert“ app with Node.js and MongoDB ➢ Frontend Development of „FinExpert“ app with React, JSX, HTML5, CSS ➢ Backend Development of „IIoT Dashboard“ with Node.js, TypeScript, Sequelize, Socket.IO and PostgreSQL with TimescaleDB extension ➢ Frontend Development of „IIoT Dashboard“ using Vue.js, Tailwind CSS, Headless UI, TypeScript and Chart.js ➢ Refactoring of the backend on Spring Boot, Java 11, WebSockets and MongoDB ➢ Testing the backend with BDD and TDD as well as testing framework JUnit ➢ Configuration of a data broker for communication between services using Apache Kafka and Spring Boot ➢ Configuration of a Data Transformer for the transformation of data coming from the Data Broker using Kafka Streams ➢ Containerisation of all services (FinExpert and IIoT Dashboard) with Docker and docker-compose ➢ Configuration of a reverse proxy using Traefik Proxy ➢ Agile planning and execution of tasks according to Scrum and Behaviour-Driven Development ➢ Agile documentation of team decisions using Agile Decision Log and AsciiDoc
2018 Apr. - 2021 Dec.	**Researcher for project „INTIA“ at Cologne University of Applied Sciences** ➢ Inclusive Prototyping with young people ➢ Design and implementation of a new methodology for fast, playful, behaviour-driven prototyping called "Behaviour-Driven Prototyping"

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	➢ Participatory Prototyping of technical solution ideas using Behaviour-Driven Prototyping ➢ Publication of "Inklusive partizipative Technikentwicklung am Beispiel InTiA." ➢ Presentation of "Playful Introduction to Technology and Co-Creative Prototyping" ➢ Configuration of an MQTT server for lightweight communication between IoT end devices on a Raspberry Pi 3+ with a Raspbian operating system ➢ Translation between Zigbee and MQTT communication protocols using "zigbee2mqtt" ➢ Visual programming of application logic with Node-RED ➢ Agile planning and execution of tasks according to Scrum
2018 Mar. - 2018 Sep.	**Informatics Tutor at Cologne University of Applied Sciences**
2017 Sep. - 2021 Dec.	**Research Associate at Cologne University of Applied Sciences**
2016 Apr. - 2016 Jul.	**MentoRing4Beginners at Cologne University of Applied Sciences**
2010 Jan. - 2010 Dec.	**Internship in South American Tours S.A. Perú**

Vocational Training	
2010 Jan. - 2010 Dec.	**South American Tours S.A. Perú**

Education	
2013 Oct. - 2017 Aug.	**Cologne University of Applied Sciences – Informatics (Bachelor), Gummersbach-Germany**
2012 - 2013	**Preparation for Informatics studies, Trier u. Frankfurt am Main**
2009 Mar. - 2010 Dec.	**BerufsBildungsZentrum – Alexander von Humboldt, Lima-Peru**
2004 - 2008	**German School – Alexander von Humboldt, Lima-Peru**
2003 - 2004	**Ziehenschule (Grammar School – European School), Frankfurt am Main-Germany**
2000 - 2003	**Santa Cruz Cooperative School, Santa Cruz-Bolivia**
1998 - 1999	**Aßlar Primary School, Aßlar-Germany**
1995 - 1998	**Santa Cruz Cooperative School, Santa Cruz-Bolivia**

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Expertise	
IT Experience since	2017
Soft Skills	Co-creative work in hybrid learning spaces, Storytelling for teaching, Successful communication - successful teamwork, Rhetoric in public speaking, Rhetoric in negotiation techniques
Core Skills	Requirements Engineering, Prototyping, Frontend Development with JavaScript/TypeScript, Next.js, React, Angular and Vue, Backend Development with Node.js, NestJS, and Spring Boot, MongoDB and SQL, Full-Stack Development
Industry Knowledge	Research, Tutoring, Full-Stack Application Development
Programming and Description Languages	Object-Orientated Programming with Java, Java 7, Java 8, Java 11, Java 17, JavaScript/Typescript, JSX, TSX,HTML, HTML5, CSS, Arduino, C, Bash, Python, Vim, JSON, UML, UML Component Diagram, Node-RED, Asciidoctor, AsciiDoc
Methods Know-How	Retrieval-Augmented-Generation, Server-Side Batching, PagedAttention Batching, Continuous Batching, Dynamic Batching, Autoregressive Decoding, KV Caching, Attention Matrix Caching, Semantic Caching, Model Parallelism, Tensor Parallelism, Quantization, Domain-Driven-Design, Behaviour-Driven Development, Test-Driven Development, Unit Testing, Integration Testing, Event Storming, Scrum, Kanban, REST, Git, Branch-Per-Task-Strategy, Continuous Integration, Continuous Deployment, Behaviour-Driven Prototyping, Rapid Prototyping, Plug & Play, Gamification, Co-Creation, Agile Work, Agile Documentation, Microservices Architecture Style, Scientific Work, Supervised Learning, Unsupervised Learning, Semi-supervised Learning, Clustering, Dimensionality Reduction, Principal Component Analysis, Fuzzy Search, Association Rule Mining, „Apriori“-Algorithmus, „FP-Growth“-Algorithmus, „Interesting Rules“, „Decision-Trees“-Algorithmus, Neuronale Netze, K-Means Clustering, Chaos Engineering, TDD’ing Containers, Istio Service Mesh, Intelligent Tutoring System, Domain Model, Expert Model, Student Model, Black Box Model, Glass Box Model, Cognitive Model, Constraint-Based Modeling, Bayesian Model, Bayesian Networks, Tutoring Strategies (Scaffolding, Feedback, Hints, Encouragement), Cycle of Expertise, Learning Outcomes, Bloom’s Revised Taxonomy, Conditional Probability, Multivariate Distribution, Conditional Independence, Expert-centric Student Model, Efficiency-centric Student Model, Data-centric Student Model, Collaborative Recommendation, Content-based Recommendation, Alternating Least Squares, Matrix Factorization, Dependency Injection, Inversion of Control, Resilient Distributed Dataset, Root-Mean-Square Error, Digital Sticky Notes, Feature Voting, Agile Decision Log, Docs-as-Code
Operating Systems and Platforms	GNU/Linux, Debian, Ubuntu, Manjaro Linux, macOS, Raspbian, EndeavourOS, AWS
Known Frameworks	Cypress, Jest, PyTorch, Streamlit, LangChain, LlamaIndex, RAG, Spring Web MVC, Spring Boot, Spring Boot Test, Spring Data REST, Spring Data JPA, Vue.js, React.js, Node.js, Gradle, Chart.js, Express.js, Docker, docker-compose, Traefik Proxy, Apache2 Reverse Proxy, Junit, Tailwind CSS, MQTT, Zigbee, Angular.js, SciPy, pandas, Django, Flutter, Growth Mindset, Apache Spark, Dataframe API, Dataset API, Apache Kafka, Kafka Streams
Software & Tools	Text-Generation-Inference, Large Language Models (LLM), Llama 2, LibreOffice, Intellij IDEA Ultimate, Visual Studio Code, Netbeans,

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	GitLab, Bitbucket, JIRA, Confluence, Docker CLI, Sequelize, MongoDB, PostgreSQL, TimescaleDB, ChromaDB, LaTeX (Overleaf), draw.io, Miro-Board, Zoom, GIMP, Socket.IO, WebSockets, Headless UI, Microsoft Teams, mongoose, Apache Webserver, zigbee2mqtt, Project Lombok, Netflix Eureka Service Registry, Jenkins, SSH, Google Docs, Google Drive, Google Calendar, Ansible, Puppet, Collaborative Filtering with Mllib, Maven, HTTP, Elastic Beanstalk, AWS CICD, AWS CloudFormation, AWS SQS, SNS & Kinesis

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Projects/References

Further Development of Health Platform allmo.ch	July / 2025 – September / 2025
Further developed a holistic health platform for Swiss users, integrating insurance with personalised services via partnerships and intelligent technologies to promote preventive health, enable individual management, and deliver sustainable value across life stages.	
Industry Sector	Health Insurance
Company	Helsana AG
Role	Full-Stack Engineer
Activity	➢ Backend Development with Node.js, TypeScript, NestJS, TypeORM, and MSSQL ➢ Frontend Development with Node.js, TypeScript, and Next.js ➢ Dependency management with npm ➢ Optimise high-performance build system and CI tasks for TypeScript codebases, and scale monorepo with Turborepo ➢ Integration Testing with Jest ➢ E2E Testing with Cypress ➢ Collaborative programming with Git, IntelliJ, and Azure Repos ➢ Continuous integration and deployment (CI/CD) using a Azure Pipelines ➢ Agile planning and execution of tasks according to Scrum and Behaviour-Driven Development ➢ Fix race condition bugs by specifying tests and implementing the fix by means of Test-Driven Development
Systems, Methods, Technologies	Next.js, React, NestJS, TypeScript, TypeORM, MSSQL, Scrum, Behaviour-Driven Development, Test-Driven Development, Turborepo, Docker, Docker Compose, Cypress, NGINX, Azure Repos, Azure Pipelines, DatoCMS, OpenAPI Specification, IntelliJ IDEA, Cypress, Jest

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Data Portal for Publication of Economic Data and Bank Statistics	June / 2024 – June / 2025
Collected statistical data is published in aggregated form. For this, an internal content management system, as well as a highly available web portal are operated. Data can be viewed and downloaded as a table or as a chart.	
Industry Sector	Banking
Company	Leading National Financial Institution (Confidential per NDA)
Role	Full-Stack Engineer
Activity	➢ Backend Development with Java 17, Spring Boot, and OracleDB ➢ Frontend Development with TypeScript and Angular ➢ Dependency management with Gradle ➢ Application Deployment in Windows Server ➢ Agile planning and execution of tasks according to Scrum ➢ Automate provisioning, configuration management, orchestration, and application deployment with Ansible ➢ Continuous integration and deployment (CI/CD) using a Jenkins server ➢ Enterprise search with Apache Solr ➢ Manage messaging and integration patterns with IBM MQ ➢ Unit Testing with JUnit, Mockito, and AssertJ ➢ Integration Testing with Karma, and migration to Jest ➢ E2E Testing with Cypress ➢ Collaborative programming with Git, IntelliJ, and GitLab
Systems, Methods, Technologies	Java, Spring Boot, Angular, TypeScript, Gradle, Windows Server, JPA, OracleDB, Scrum, Ansible, Apache Solr, IBM MQ, JBoss Application Server, Jenkins Server, Cypress, Unit Testing, Integration Testing, E2E Testing, Git, GitLab

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FinLogGPT	November / 2023 – Januar / 2024
In the dynamic world of finance, where accuracy and privacy are paramount, FinLogGPT provides secure, localised conversations with financial documents. FinLogGPT is more than just an AI chatbot; it is a trusted assistant that provides high-quality answers to any financial question. *Data protection first and foremost:* In finance, data is highly sensitive. FinLogGPT ensures that private data never leaves the IT infrastructure in which it was installed and configured. All operations are performed locally without having to access external APIs. This ensures that all financial information remains 100% secure and private.	
Industry Sector	Information Technology and Services
Company	Randstad Digital Switzerland AG
Role	Full-Stack Developer
Activity	➢ Backend Development with Python, PyTorch and ChromaDB ➢ Design and development of an AI chatbot solution using advanced NLP (Natural Language Processing) techniques and machine learning models such as GGUF, GPTQ and GGML ➢ Testing and evaluation of LLMs according to quality of responses and inference response time ➢ Documentation and provision of developer guides for third-party providers and end users ➢ Frontend Development of graphical user interfaces (GUIs), based on frameworks such as Streamlit, to simplify interaction with FinLogGPT, and React ➢ Carrying out user research and usability tests to improve the user experience ➢ Monitoring system performance and carrying out performance analyses ➢ Testing, evaluating and optimising chatbot interactions and response times through continuous adjustments and updates ➢ Learn how to deploy an application using Elastic Beanstalk and AWS CICD tools with full automation ➢ Learn how to write infrastructure as code using AWS CloudFormation ➢ Learn how to mplement messaging and integration patterns using AWS SQS, SNS & Kinesis
Systems, Methods, Technologies	Retrieval-Augmented-Generation, Server-Side Batching, PagedAttention Batching, Continuous Batching, Dynamic Batching, Autoregressive Decoding, KV Caching, Attention Matrix Caching, Semantic Caching, Model Parallelism, Tensor Parallelism, Quantization, Text-Generation-Inference, Large-Language-Modelle (LLM), Llama 2, PyTorch, LangChain, LlamaIndex, RAG, Python, Streamlit, ChromaDB, Elastic Beanstalk, AWS CICD, AWS CloudFormation, AWS SQS, SNS & Kinesis, React

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E-AKTE	Februar / 2023 – July / 2023
The electronic file (E-AKTE) is the digital image of the paper file. The basis for this is the digitisation of incoming mail and subsequent electronic processing and filing. The E-AKTE is therefore the way to a paperless office and an important building block for modern services. The German employment agency has already been working with E-AKTE for several years. Services are required to maintain and further develop the E-AKTE process from a professional and technical point of view. The services primarily cover the area of development.	
Industry Sector	Social Services
Company	SmartConData GmbH - Bundesagentur für Arbeit
Role	IT Consultant and Backend Developer
Activity	➢ Creating, testing, integrating and documenting complex, performance-critical software and frameworks (server-side) ➢ Localisation, analysis and elimination of software errors ➢ Creation of sub-concepts for the further development of software development processes
Systems, Methods, Technologies	Scrum, Behaviour-Driven Development (BDD), Test-Driven-Development (TDD), JUnit, IntelliJ Ultimate, JIRA, Confluence, Git/Bitbucket, Branch-Per-Task-Strategy, Quarkus, Java 11, PostgreSQL, Apache Kafka, Kafka Streams, Amazon Simple Storage Service, Kubernetes, Helm Charts

Industrial Internet of Things Dashboard (MVP)	January / 2022 – January / 2023
Development of a Minimal Viable Products (MVP) dashboard, which is used for the dynamic display of data that collects real-time data from sensors (Internet of Things) and industrial machines (Industrial Internet of Things) and is visualised accordingly.	
Industry Sector	Internet of Things
Company	SmartConData GmbH
Role	IT Consultant and Full-Stack Developer
Activity	➢ Backend Development with Node.js, TypeScript, Sequelize, Socket.IO and PostgreSQL with TimescaleDB extension ➢ Containerisation of all services with Docker and docker-compose ➢ Administration of an Ubuntu server system (LTS version 18.04) ➢ Frontend Development using Vue.js, Tailwind CSS, Headless UI, TypeScript and Chart.js ➢ Configuration of a reverse proxy using Traefik Proxy ➢ Agile planning and execution of tasks according to Scrum and Behaviour-Driven Development ➢ Conception and vision exchange for the MVP using the Miro Board, Digital Sticky Notes and Feature Voting ➢ Modelling the architecture of the MVP with Miro-Board ➢ Refactoring of the backend on Spring Boot, Java 11, WebSockets

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	and MongoDB ➢ Testing the backend with BDD and TDD as well as testing framework JUnit ➢ Configuration of a data broker for communication between services using Apache Kafka and Spring Boot ➢ Configuration of a Data Transformer for the transformation of data coming from the Data Broker using Kafka Streams ➢ Agile documentation of team decisions using Agile Decision Log and AsciiDoc
Systems, Methods, Technologies	Scrum, Behaviour-Driven Development (BDD), Test-Driven-Development (TDD), JUnit, Node.js, Express.js, TypeScript, Sequelize, Socket.IO, PostgreSQL, TimescaleDB, Vue.js, Tailwind CSS, Headless UI, Chart.js, Visual Studio Code, WebSockets, JIRA, Git/Bitbucket, Branch-Per-Task-Strategy, Docker CLI, docker-compose, Microsoft Teams, Traefik Proxy, GNU/Linux-Server (Ubuntu LTS 18.04.), Spring Boot, Java 11, WebSockets, MongoDB, Agile Decision Log, AsciiDoc, Miro-Board, Digital Sticky Notes, Feature Voting, Apache Kafka, Kafka Streams

FinExpert	January / 2022 – January / 2023
Development of a multi-client capable system that is used for the administration and interactive counselling of customers in financial and insurance matters.	
Industry Sector	IT Consulting, Financial Consulting
Company	SmartConData GmbH
Role	IT Consultant and Full-Stack Developer
Activity	➢ Backend Development with Node.js and MongoDB ➢ Frontend Development with React, JSX, HTML5, CSS ➢ Implementation of the design specifications while guaranteeing multi-client capability and any Cis ➢ Implementation of interactive dialogues & data manipulation using HTML5 ➢ Design and development towards responsive design and usability on mobile devices ➢ Connection of external interfaces with insurance and financial APIs ➢ Agile planning and execution of tasks according to Scrum and Behaviour-Driven Development
Systems, Methods, Technologies	Scrum, Behaviour-Driven Development, REST, JavaScript, Node.js, HTML5, CSS, React, JSX, MongoDB, Deployment, mongoose, Express.js, Visual Studio Code, GNU/Linux-Server (Ubuntu LTS 18.04.), WebSockets, JIRA, Git/Bitbucket, Branch-Per-Task-Strategy, Apache Webserver, Docker CLI

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INTIA	September / 2019 – December / 2021
Digital technology makes everyday life easier and allows many people to participate in something that would remain unattainable without it. It can help people to live more independently and make their own decisions. You can take part in something without travelling and connect with others, even make new friends online. But not everyone benefits equally from technology. Some people need a customised technical solution for their home that is not available as a ready-made product. The project team wants to empower people to invent technical solutions themselves and have fun designing them together.	
Industry Sector	Research and IT
Company	Cologne University of Applied Sciences
Role	Researcher and IoT-Developer
Activity	➢ Inclusive Prototyping with young people ➢ Design and implementation of a new methodology for fast, playful, behaviour-driven prototyping called "Behaviour-Driven Prototyping" ➢ Participatory Prototyping of technical solution ideas using Behaviour-Driven Prototyping ➢ Publication of "Inklusive partizipative Technikentwicklung am Beispiel InTiA." ➢ Presentation of "Playful Introduction to Technology and Co-Creative Prototyping" ➢ Configuration of an MQTT server for lightweight communication between IoT end devices on a Raspberry Pi 3+ with a Raspbian operating system ➢ Translation between Zigbee and MQTT communication protocols using "zigbee2mqtt" ➢ Visual programming of application logic with Node-RED ➢ Agile planning and execution of tasks according to Scrum
Systems, Methodes, Technologies	MQTT, Zigbee, zigbee2mqtt, Node-RED, Raspbian, Miro Board, Zoom, Behaviour-Driven Development, Behaviour-Driven Prototyping, Rapid Prototyping, Plug & Play Concept, Gamification, Co-Creation, Agile Work, Scrum

Project Exchange on the Gummersbach Campus	September / 2018 – April / 2019
Further development of the project exchange on the Gummersbach campus as a microservice architecture that brings together students of Cologne University of Applied Sciences, local companies and lecturers at the Cologne University of Applied Sciences.	
Industry Sector	Web Development
Company	Cologne University of Applied Sciences

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Role	Full-Stack Developer
Activity	➢ Architecture design of the components according to the Microservices Architecture Style ➢ Illustration as UML component diagram of the communication between the components ➢ Design and development of several microservices in the backend using Spring Boot and Java 8 ➢ Design and development of the front end using Angular and TypeScript ➢ Use of Material Design for the look & feel of the web application ➢ Initial setup and administration of an Ubuntu server system (LTS version 16.04.) ➢ Containerisation and orchestration of the individual microservices using Docker and docker-compose ➢ Continuous integration and deployment (CI/CD) using a Jenkins server ➢ Configuration of a reverse proxy using Apache a2 ➢ Agile working and agile project management through Scrum
Systems, Methods, Technologies	MQTT, Zigbee, zigbee2mqtt, Node-RED, Raspbian, Miro Board, Zoom, Behaviour-Driven Development, Behaviour-Driven Prototyping, Rapid Prototyping, Plug & Play Concept, Gamification, Co-Creation, Agile Work, Scrum, Angular.js, TypeScript, Domain-Driven Design, Spring Boot, Spring Data REST, Spring Data JPA, Java 8, Project Lombok, Netflix Eureka Service Registry, Jenkins Server, Confluence, Scrum, UML-Komponentendiagramm, Microservics Architecture Style, Docker, docker-compose, SSH, Continuous Integration, Continuous Deployment, Apache2 Reverse Proxy

WMA Acquisition of third-party funding	March / 2018 – September / 2019
Research funding opportunities for research activities and prepare project applications.	
Industry Sector	Research and Teaching
Company	Cologne University of Applied Sciences
Role	Researcher and Tutor
Activity	➢ Support in researching funding opportunities for research activities related to the research fields of the Systems Design Group ➢ Support in the formulation of research proposals and in the organisation of research networks ➢ Support in the planning and realisation of research publications

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	➢ Tutoring in Informatics I & II
Systems, Methods, Technologies	Broad expertise in the field of innovative IT topics, Scientific Work, Scrum, Informatics I & II expertise, Java 7, Netbeans, Google Docs, Google Drive, Google Calendar

Data Mining - Ford	November / 2017 – February / 2018
Calculate loss ratio versus volume to identify anomalies to see if certain vehicle lines, plants, markets, routes, modes of transport, carriers or dealerships have a significant deviation from the norm. Use of binary logistic regression and regression tree models to identify anomalies. The anomalies found are displayed in a dashboard.	
Industry Sector	Research, Transportation & Logistics
Company	Cologne University of Applied Sciences
Role	Data Scientist and Developer
Activity	➢ Evaluation and selection of suitable tools for data mining analysis of existing production processes ➢ Evaluation and implementation of suitable algorithms in Python ➢ Collaborative programming with Git and Visual Studio Code ➢ Transformation of given data into a suitable model ➢ Statistical analysis by sorting, filtering, cleaning and linking the Ford data set
Systems, Methods, Technologies	Python, SciPy, pandas, Git, Visual Studio Code, Supervised Learning, Unsupervised Learning, Semi-supervised Learning, Clustering, Dimensionality Reduction, Principal Component Analysis, Fuzzy Search, Association Rule Mining, „Apriori“-Algorithm, „FP-Growth“-Algorithm, „Interesting Rules“, „Decision-Trees“-Algorithmus, Neuronal Networks, K-Means Clustering

TechRadar TH Köln	April / 2018 – August / 2018
An understanding of the trends in software technologies is of great importance, especially when they are being developed at an increasingly rapid pace. In the information age, these developments lead to an explosive growth in new and further developments of programming languages and frameworks, platforms, techniques and tools. It then becomes extremely difficult to see the forest for the trees. Based on the "Technology Radar by ThoughtWorks" (https://www.thoughtworks.com/radar), the TechRadar at TH Köln analyses and evaluates various innovative technologies. These are pre-selected with the help of an initial brainstorming session and then categorised according to evaluation criteria such as platform independence, unique selling points, development status, etc. in a further process. Both the selection and the evaluation are as objective as possible, but are ultimately based on the subjective assessment of the team behind TechRadar at TH Köln.	

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Industry Sector	Technology Consultancy
Company	Cologne University of Applied Sciences
Role	Technology Consultant and Developer
Activity	➢ Evaluation and prototypical implementation of selected technologies (methods, tools, languages & frameworks) according to Scrum ➢ Definition of suitable technical criteria ➢ Implementation of a TechRadar (in the sense of ThoughtWorks TechRadar) ➢ Classification of these technologies in the implemented TechRadar TH Köln
Systems, Methods, Technologies	Django, Flutter, Chaos Engineering, TDD'ing Containers, Istio Service Mesh, Ansible, Puppet

Bachelor thesis	June / 2017 – August / 2017
The aim of this project was to develop a concept for an intelligent tutor system for the electronic teaching platform ArchiLab at Cologne University of Applied Sciences.	
Industry Sector	Artificial Intelligence and E-Learning
Company	Cologne University of Applied Sciences
Role	Developer
Activity	➢ Design of a traditional architecture of Intelligent Tutoring Systems (ITS) ➢ Conception of a data model for Learning Outcomes ➢ Technical modelling of the Student and Tutor Domain o Evaluation and fostering of student knowledge o Evaluation and fostering of a student's affective states ➢ Technical modelling of the ArchiLab domain ➢ Calculate probabilities based on Bayesian Networks ➢ Design of a Bayesian Student Model ➢ Evaluation of methods in Machine Learning to support the learning of a student
Systems, Methods, Technologies	Intelligent Tutoring System, Domain Model, Expert Model, Student Model, Black Box Model, Glass Box Model, Cognitive Model, Constraint-Based Modeling, Bayesian Model, Bayesian Networks, Tutoring Strategies (Scaffolding, Feedback, Hints, Encouragement), Cycle of Expertise, Growth Mindset, Learning Outcomes, Bloom's Revised Taxonomy, Conditional Probability, Multivariate Distribution,

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	Conditional Independence, Expert-centric Student Model, Efficiency-centric Student Model, Data-centric Student Model

Recommender system for the ArchiLab e-learning platform	March / 2017 – June / 2017
This project involved the design and subsequent development of a recommendation system for the ArchiLab electronic teaching platform.	
Industry Sector	Artificial Intelligence
Company	Cologne University of Applied Sciences
Role	Developer
Activity	➢ Development using Behaviour-Driven Development and Test-Driven Development ➢ Testing with JUnit, AssertJ, JsonPath and Mockito (spring-boot-starter-test) ➢ Integration Testing using HTTP requests and @SpringBootTest ➢ Evaluation of the "Big Data" framework Apache Spark ➢ Design and development of a recommender system as a microservice with Spring Boot and Apache Spark ➢ Documentation of the REST API using Spring REST Docs and Asciidoctor
Systems, Methods, Technologies	Apache Spark, Spring Boot, Collaborative Recommendation, Content-based Recommendation, Alternating Least Squares, Matrix Factorization, Collaborative Filtering with MLlib, Dependency Injection, Inversion of Control, Spring Boot, Spring Web MVC, Spring Data JPA, Spring Testing, Spring REST Docs, Asciidoctor, Maven, Behaviour-Driven Development, Test-Driven Development, Unit Testing, Integration Testing, @SpringBootTest, REST API, Java, Resilient Distributed Dataset, Root Mean Square Error, Dataframe API, Dataset API, HTTP

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