Moritz Dück, he/him/his **moritzdueck.com**

Work Experience

Full Stack Software Developer, Simunto | Zurich, Switzerland | Sep 2021 – now
- Developed web-application for editing public transport and street networks with up to 10.000.000 links with Typescript, Vue.js, MapLibre GL and deck.gl.
- Created high-throughput data processing pipelines in Java and visualization toolkit in Angular for traffic simulation outputs with up to 200 GB of raw text files per simulation.
- Built distributed job scheduling framework for running simulations on premise and on AWS.

Software Developer Consultant, ThoughtWorks | Berlin, Germany | Jan 2020 – Sep 2021
- Developed and operated 8 Java microservices on Kubernetes cluster on AWS for applications in the payment domain processing up to 1000 requests per second.
- Designed and implemented software for highly available e-commerce platform in Scala (functional).
- Promoted agile ways of working, TDD, pairing and helped the client in improving internal processes.

Education

ETH Zürich | M. Sc. Computer Science | Sep 2021 – Jul 2024
Major in Machine Intelligence, Minor in Data Management Systems

Otto-Friedrich University Bamberg | B. Sc. Applied Computer Science | Sep 2016 – Sep 2019
Graduation with distinction (GPA 4.0/4.0 – very good with distinction)
- Bachelor Thesis: An Automated Approach to Score Following with Polyphonic Acoustic Guitar Music
- Teaching Assistant: Advanced Java Programming, Introduction to Algorithms, Programming and Software. Held exercise sessions for 80+ students.

Projects

Interactive Explainable for CNNs | 2023
Created an interactive science publication. Developed novel visualizations for CNN models and implemented custom visualizations using d3.js embedded within a Vue.js website. Additionally, designed and developed a Python Flask backend to enable real-time inference. Published to the IEEE VISxAI workshop.

Visual Analytics Framework | 2022
Developed a platform for visualizing machine learning model predictions, emphasizing model selection and bias detection. Successfully published the project in an IEEE Visualization Workshop.

Guitar score following application | 2019
Implemented a web-application for automatically tracking scores for guitar players. Developed a parser to extract machine-readable data from online chords websites. Implemented user interface to annotate the data with musical timing annotations and designed a viewer to replay the chords.

Skills

Programming Languages	Java, Typescript/Javascript, Python, Scala, Haskell, Clojure, R, SQL
Frameworks	Angular, React, Vue, Redux, Cypress, D3.js, Reframe, Laravel, Spring Boot, Play, PyTorch, Spark, SciKit, Numpy
Tools	Git, Docker, GitHub Actions, GitLab CICD, PostgreSQL, MongoDB, Neo4J, Cassandra, deck.gl, Maplibre GL
Languages	German (native), English (proficient), French (basic)