Geoffrey Karnbach

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EDUCATION

Technical University — Vienna, Austria
Master of Software Engineering & Internet Computing — *Feb. 2025 – Present*

Technical University — Vienna, Austria
Bachelor of Software & Information Engineering, Passed with distinction — *Oct. 2021 – Jan. 2025*

EXPERIENCE

Software Engineer — August 2024 – Present
Technical University — *Vienna, Austria*

- Used Quarkus (Java) for the backend and Angular with Material Design for the frontend in the DAMAP project.
- Implemented a new admin dashboard and live document preview, enhancing usability for numerous researchers of 3 partner universities in Austria using DAMAP.
- Collaborated in an Agile environment (SCRUM), delivering features incrementally with regular sprints and standups.
- Contributed to the development of a scalable system architecture, ensuring seamless integration across multiple universities with their own customization.

Student Research Assistant — December 2022 – September 2023
Technical University — *Vienna, Austria*

- Worked on the OSSDIP project (Open Source Secure Data Infrastructure and Processes), focusing on developing a repository node, CLI tools, and microservices.
- Implemented an autonomous computing node for caching software packages and OS updates.
- Automated the validation of software packages through a CLI tool.
- Developed an internal website to facilitate project setup, allowing users to input required data and configure their required computing node.
- Ported the core components of OSSDIP onto a Raspberry Pi platform, writing custom scripts to emulate Ansible playbooks on CentOS Linux.

PROJECTS

LÄNDR | *Java, Spring Boot, TypeScript, Angular, JUnit* — April 2023 – June 2023

- Developed a comprehensive party location booking platform that connects location owners (Lenders) and party planners (Renters) for weddings, birthdays, and other events.
- Led the testing effort, conducting extensive system testing and writing over 250 unit and integration tests using JUnit, ensuring a robust and reliable platform.
- Implemented core backend services using Java and Spring Boot, integrating features such as location creation, timeslot management, and user transaction handling.
- Designed a custom reputation system to build trust between lenders and renters, promoting secure transactions and repeat users.

Titanic Survival Prediction | *Python, Tensorflow, Flask, Angular* — July 2024 – August 2024

- Engineered advanced data preprocessing techniques, including KNN and MICE imputation.
- Developed and evaluated multiple machine learning models (SVM, Decision Tree, Gradient Boosting) achieving a peak accuracy of 79.90% using RBF Kernel SVM, placed in the top 3% of the Kaggle Titanic competition
- Built a Flask-based backend and Angular frontend for a live demo, enabling real-time Titanic survival predictions and user interaction with the model.
- Fine-tuned decision tree models through feature engineering, improving model accuracy by almost 12% and demonstrating the impact of travel companions and titles on survival predictions.

TECHNICAL SKILLS

Languages: Java, Python, C, SQL (PostgreSQL / H2), TypeScript, HTML/CSS
Frameworks: Spring Boot, Quarkus, Angular, Flask, JUnit, Bootstrap
Areas: Fullstack Engineering, Machine Learning / Datascience, DevOps / PaaS, Distributed Systems
Developer Tools: Ansible, OpenStack, Git, Docker, Linux
Libraries: pandas, NumPy, Matplotlib, Tensorflow, Flask