

Thomas Kreidl

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Software Developer

Passionate about mastering new technologies and seamlessly integrating them with my expertise. Specialize in data-driven solutions, making informed decisions through statistical analyses and AI implementation. Prioritize scalability in system design to ensure smooth future expansions. Efficiently integrate workflows and DevOps practices for seamless execution.

WORK EXPERIENCE

**Siemens • Nürnberg, Bayern, Deutschland • Hybrid •
05/2022 – Present**

Master Thesis

- Generating structured control language (SCL) code using a large language model (LLM) and optimizing it through the integration of a knowledge base with the retrieval augmented generation pattern (RAG).

TIA Portal Add-Ins Development

- Development of TIA Portal addins using the openness interface providing experimental features for customers.

**Technische Hochschule Nürnberg Georg Simon Ohm •
Nürnberg, Bayern, Deutschland • 07/2022 – 10/2022**

Student Assistant

- Programming UX and backend for Orca sound recordings. Implementation and analysis of embeddings and dense vector based search of similar sound sections using Elastic Search.

**Syntegon • Crailsheim, Baden-Württemberg, Germany •
09/2020 – 02/2022**

Bachelor Thesis

- Conceptual design of automatic code conversion processes between plc systems and development of a conversion tool.

Software Engineer

- Testing of decentralized WAGO periphery in Siemens Simatic using function tests and trace recordings.

**Bosch • Crailsheim, Baden-Württemberg, Germany •
09/2013 – 08/2017**

Application Developer

- Migration and validation of Siemens TIA Software.

Mechatronics Engineer

- Vocational training as a mechatronics engineer

SKILLS

Academic Writing, Android Development, Artificial Intelligence (AI), Azure Cognitive Services, C#, C++, Data Processing, Data Science, Deep Learning, Docker, Elasticsearch, Git, Information Retrieval, Java, Kotlin, Machine Learning, Maschinelles Lernen, Microsoft Office, Mobile Application Development, .net, .NET-Framework, PLC Programming, Python (Programming Language), RAG, SCL, Sequence Learning, Siemens TIA Portal, Social Network Analysis, Software Development, TIA Openness API, Unity, Visual Studio, Vue.js

Hobbies: Programming

Sports: Cycling, Football, Running

EDUCATION

Master of Science – MS in Computer Science

Technische Hochschule
Nürnberg Georg Simon
Ohm
03/2022 – 03/2024

Bachelor of Engineering – BE in Electrical Engineering and Information Technology

Technische Hochschule
Nürnberg Georg Simon
Ohm
09/2018 – 03/2022

PROJECTS

Analysis of Politicians` Tweets to Explore Political Communication with Social Network Analysis •

10/2022 – 01/2023

This paper analyzes Twitter data to study communication patterns among German MPs around the 2021 federal election. It examines potential shifts towards the "Ampel" coalition (SPD, Greens, FDP) by comparing interactions before and after the election using cluster, social network, sentiment, and topic analysis. The Girvan-Newman Algorithm identifies MP clusters, and network metrics assess changes. Sentiment and topic analyses reveal changes in communication and consistent topic relevance, though no clear coalition tendencies are observed.

An alternative approach to identifying n-calls in audio tapes from the Orchiade based on audio embeddings •

03/2022 – 09/2022

This paper develops a method for detecting similar segments in audio sequences using machine learning to create audio embeddings. Elasticsearch's Dense-Vector field performs the similarity analysis. The approach is evaluated by comparing expected and actual search query results in Elasticsearch. The paper concludes with a discussion of findings and future research directions.

Sleepst – Smart Android Alarm Clock with Automatic Sleep Detection •

02/2021 – 02/2022

Development of an Android app for automatic sleep detection, which can wake the user after a defined sleep duration. With the help of the Google Sleep Api and trained algorithms, the time of falling asleep, the time of waking up and the user's sleep phases can be recorded completely from the background based on the cell phone.

Article – Web

Comparison of Neural Network Models for Predicting the Power Output of Photovoltaic Plants with Spatio-Temporal Data Variations

This study compares neural network models for predicting photovoltaic (PV) power output using spatio-temporal data. Associated with Technische Hochschule Nürnberg, it explores the relationship between weather conditions and PV output. Machine learning models forecast daily power based on weather data and meta-parameters to account for hidden plant characteristics. Models are evaluated by predicting yields of specific PV plants and a general model using data from various German plants. Results show the general model performs better, and meta-parameters effectively compensate for missing plant details. The prediction quality depends heavily on weather forecast accuracy.