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Projects

Video Content Analysis Platform

<i>Description</i>	Designing and developing an AI-driven video content understanding system to analyze episodic media by extracting metadata such as plotlines, character arcs etc.
<i>Tasks</i>	<ul style="list-style-type: none">○ Developing and maintaining several microservices and REST APIs with FastAPI.○ Designing scalable PostgreSQL data models○ User Authentication & Management: Implemented secure sign-in flows using GCP Identity Platform, supporting email/password and federated providers○ Automating software delivery through robust CI/CD pipelines for rapid deployment cycles○ Provisioning and managing cloud resources using OpenTofu (IaC)
<i>Tools</i>	GCP Services OpenTofu Python FastAPI Docker GitHub & GH Actions PostgreSQL LLMs OTel

Creative Story Development Workflow Platform

<i>Description</i>	Architecting and implementing a modular AI workflow system to support creative professionals throughout the research, ideation, and storyboarding phases of production
<i>Tasks</i>	<ul style="list-style-type: none">○ Engineering high-performance services with FastAPI, focusing on asynchronous task processing○ Structuring PostgreSQL databases for efficient retrieval of complex storyboarding metadata○ Managing user access and security using OAuth2.0 and enterprise-grade authorization protocols○ Integration and deployment workflows (CI/CD)○ Deploying and maintaining cloud-native infrastructure using Terraform.
<i>Tools/Frameworks</i>	Azure Services Terraform Python FastAPI Docker GitHub & GH Actions PostgreSQL LLMs Otel Langchain Langsmith

Data Exchange Store

<i>Description</i>	Designing & developing a multisubscription data exchange store in the Azure cloud to allow different companies to share and buy PII data (high security requirements)
<i>Tasks</i>	<ul style="list-style-type: none">○ Developing & maintaining several services, including REST APIs with FastAPI, Databricks jobs and numerous Azure services○ Developing & maintaining data pipelines (ETL) with Azure Synapse & Databricks○ User & access management, authentication & authorization (OAuth2.0)○ Database design (data model schemas, partitioning, indexing)○ Automating the integration and deployment of code changes to ensure seamless and rapid delivery of software (CI/CD)
<i>Tools</i>	Azure Services Spark Python Databricks FastAPI Docker GitHub & GH Actions PostgreSQL MSSQL NoSQL Trivy OWASP

Cloud migration – optimization algorithm

<i>Description</i>	Designing & developing a cost-effective data processing solution in the Azure cloud to solve optimization problems for the customer
<i>Tasks</i>	<ul style="list-style-type: none">○ Designing & implementing a containerized serverless architecture in Azure○ Provisioning the cloud infrastructure using Infrastructure as Code (IaC)
<i>Tools</i>	Azure Services Terraform Python FastAPI GitHub & GH Actions

Agentic Retrieval Augmented Generation (RAG) System

<i>Description</i>	Engineering an RAG system with agents connected to data sources to enable efficient, context-aware querying and retrieval
<i>Tasks</i>	<ul style="list-style-type: none">○ Developing robust backend services and REST APIs integrated with OpenAI and vector databases○ Integrating secure sign-in flows and session management via OAuth2.0 and Identity services○ Designing and implementing monitoring solutions and alerting systems to ensure continuous performance tracking and timely issue detection (observability)○ Orchestrating CI/CD workflows to ensure the seamless deployment of agents and microservices○ Utilizing Terraform to manage and scale the infrastructure required for agentic workloads
<i>Tools</i>	Azure Services Terraform Python FastAPI Docker GitHub & GH Actions QDrant Otel Langchain Langfuse

Monitoring & Alerting NiFi workflows

<i>Description</i>	Setting up monitoring & alerting for existing NiFi data workflows
<i>Tasks</i>	<ul style="list-style-type: none">○ Creating, managing, and monitoring of Apache NiFi data workflows○ Processing & monitoring of timeseries data with Prometheus & Grafana in an on-premise solution
<i>Tools</i>	Apache NiFi Prometheus Grafana GitLab GitLab CI/CD

Work History

<i>Since 01/2024</i>	Freelancer Software Data AI DevOps Cloud
<i>03/2021 – 01/2024</i>	Data Engineer/Scientist Datamesh GmbH <ul style="list-style-type: none">○ Developing an AI/machine learning hub in the AWS cloud that allows users to share and run their AI models using a serverless application model framework○ Training and deploying computer vision models for object segmentation and object detection usecases○ Various customer projects through Datamesh GmbH
<i>01/2018 – 10/2020</i>	IT-Intern Center for Computational and Theoretical Biology (CCTB), Würzburg <ul style="list-style-type: none">○ Specialisation: Python programming, computational image analysis, deep learning, machine learning, GUI programming, Linux, automation of image analysis processes

Education

<i>10/2018 – 09/2021</i>	MSc Biosciences Julius-Maximilians-University, Würzburg (1,3) <ul style="list-style-type: none">○ Specialisation: Deep learning, semantic segmentation, object detection○ Master thesis: Applying a U-Net to segment microtubules in electron tomograms of trypanosoma brucei (grade: 1,0)
<i>10/2014 – 09/2018</i>	BSc Biosciences Julius-Maximilians-University, Würzburg (1,7) <ul style="list-style-type: none">○ Specialisation: Neuro-, cell- & developmental biology○ Bachelor thesis: Investigation of RhoGAPs as key players in the Drosophila sleep wake cycle (grade: 1,0)
<i>06/2013 – 12/2013</i>	German army (Bundeswehr) in Hammelburg <ul style="list-style-type: none">○ Basic training, military law & history, political education, tactical principles○ Completed and passed officer candidate course

Skills & Certifications

<i>Languages</i>	German (native) English (fluent)
<i>Certifications</i>	AZ-900: Microsoft Azure Fundamentals DP-900: Microsoft Azure Data Fundamentals AI-900: Microsoft Azure AI Fundamentals SC-900: Microsoft Azure Security, Compliance, and Identity Fundamentals AZ-204: Microsoft Azure Developer Associate AZ-104: Microsoft Azure Administrator Associate