

# Faidra Anastasia Patsatzi

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## EDUCATION

- 10/2025–expected  
03/2026** **Technical University of Munich (TUM)**  
M.Sc. Electrical Engineering and Information Technology | Current grade: 1.1 | GPA: 3.9  
Relevant coursework: Fundamentals of Foundation Models, Deep Learning for Inverse Problems, Seminar on LLM Finetuning, Computer Vision, Approximate Dynamic Programming and Reinforcement Learning
- 10/2020–07/2023** **Technical University of Munich (TUM)**  
B.Sc. Electrical Engineering and Information Technology | B.Sc. German Grade: 1.3 | GPA: 3.8  
Bachelor thesis: “Randomized Smoothing as an Adversarial Defense Mechanism for Inverse Problems”, supervised by Prof. Dr. Reinhard Heckel, Professorship of Machine Learning, TUM, graded 1.0
- 09/2014–06/2020** **Deutsche Schule Athen (German School of Athens), Greece**  
EP (Abitur): 1.0, Valedictorian

## WORK EXPERIENCE

- 06/2025** **Incoming Solutions Architect Intern** | Amazon Web Services
- 03/2025–present** **Research Intern** | Technical University of Munich (TUM)  
Generation of a high-quality pretraining dataset following state-of-the-art LLM data curation practices, to train German LMs up to 1B parameters. Project conducted at the Professorship of Machine Learning (MLI).
- 09/2024–03/2025** **GenAI Engineer Working Student** | BMW Group Research and Innovation Center  
· Development of a PoC for agentic RAG using LangGraph and custom integration of a global ontology graph to guide a SQL agent (text-to-SQL) interacting with databases for vehicle development and change management  
· Implementation of a Graph RAG PoC (text-to-SPARQL) to enable chatting with data in a graph database (Amazon Neptune) and benchmarking of this PoC to the text-to-SQL approach  
· Contribution to the evaluation of a multi-agent system for chatting with multiple SQL databases by developing a test suite using DeepEval
- 06/2023–08/2024** **Machine Learning Engineer Working Student** | Siemens AG  
· Contribution to the development of an AI-based enrichment pipeline in Azure ML for ingesting 10,000+ news, consisting of a data transformation, translation, and NER component in Python, automated generation of synthetic NER test data using GPT-4, evaluation pipeline for BERT NER models  
· Programming of a RAG document chatbot application in Java using LLM chain techniques and prompt engineering, reaching more than 200 users  
· Development of an agentic RAG (text-to-SQL) application to interact with financial data in Snowflake, using LangChain, LangGraph and Streamlit
- 11/2022–05/2023** **Software Engineer/Analytics Intern** | metafinanz Informationssysteme (Allianz Group)  
· Development of a near real-time product analytics solution using application logs streamed via Azure services and integrated into a PowerBI dashboard  
· Training, fine-tuning, and deployment of a machine learning model for a text classification task (SVM with TF-IDF) and development of a REST API using FastAPI
- 08/2021–10/2022** **Student Assistant** | Technical University of Munich (TUM)  
Tutor at the preparatory mathematics course, in “Programming in C” (LDV), and in “System Theory” (MSV)

## PROJECTS AND PROGRAMMES

- 11/2022–present** **Board Member** | she.codes by T.E.C. **Project management**  
Leading a student volunteering club active at multiple universities in Germany (TUM, KIT, Ulm) providing free coding workshops in Python to girls aged 11 to 14.
- 10/2023** **WomenHackAI Hackathon**  
Developed an OCR solution for PCB component IDs using deep learning (OCR engine) and super-resolution (ESRGAN) to enhance image resolution as a preprocessing step.
- 10/2022–10/2023** **Co-Founder** | neuroTUM **Deep Learning, PyTorch**  
Student research group focusing on neuroengineering, BCI (Brain-Computer Interface)  
Deep Learning team; performing multi-class classification using networks such as CNN-LSTM, transformers and ViTs, on data sampled from EEG brain signals. Participated at the **NeuroTechX Global Hackathon 2023**.
- 02/2023** **U-Net for Brain MRI Segmentation** **Deep Learning, PyTorch**  
Implemented and trained a U-Net architecture with a custom weighted binary cross entropy loss on a dataset containing brain MRI scans and tumor diagnoses in segmentation masks, graded 1.0.
- 11/2022** **Siemens Mentoring Programme, Cohort 2022-2023**  
Participation as a mentee and at the Siemens RIE Hackathon and Siemens RIE Conference in March 2023  
**Siemens RIE Hackathon**: development of a road risk visualization interactive web app using Python, geopandas, and dash for Munich based on historic accident data for location, severity, and frequency.

## SKILLS & TECHNICAL KNOWLEDGE

**Programming Languages**: Python, C++, SQL, basic HTML and CSS

**Technologies**: PyTorch (CUDA), MLflow, TensorBoard, transformers, LangChain, spacy, scikit-learn, Pandas, Numpy, Matplotlib, Git, Docker, Streamlit, pyomo, JupyterLab, PowerBI, Azure Cloud, AzureML Studio, Azure OpenAI, Azure Cognitive Search, Redis

**Languages**: German (C2), English (C2), Greek

**Soft Skills**: Debate (attended 14 international MUN conferences), Organization of a MUN conference (DSAMUN 2019)