Anar Amirli

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Education

Universität des Saarlandes   **Saarbrücken, Germany**
M.Sc. Computer Science   *Oct 2019 – Aug 2025*

- DAAD (Deutscher Akademischer Austauschdienst) Graduate Scholarship
- Thesis**:** "*Beyond Heatmaps: A Visual Concept-Based Explainable Model via Graph Attention Networks*" — Seminar grade: 1.0

Baku Engineering University   **Baku, Azerbaijan**
B.Eng. Computer Engineering   *Sep 2014 – Jun 2019*

- Graduated with Honors | Government Scholarship for Academic Excellence

Selected Work Experience

Research Assistant & Thesis Student   **Saarbrücken, Germany**
DFKI GmbH (German Research Center for AI)   *Mar 2023 – Aug 2025*

- Designed an **ante-hoc explainable AI model** with Graph Neural Networks (PyTorch) for **skin cancer diagnosis**, achieving ~**3%** higher accuracy than baseline CBMs while providing clinical interpretability through **visual, concept-based explanations**.
- Delivered a **full pipeline** with dashboards, enabling clinician-ready **interpretability tools** for dermatological image classification.

Research Assistant   **Saarbrücken, Germany**
DFKI GmbH (German Research Center for AI)   *Nov 2021 – Sep 2022*

- Built and deployed **end-to-end ML solutions** (TensorFlow, pytest, Docker, AWS) for **anomaly and failure detection** in manufacturing lines at Schott AG, improving anomaly localization accuracy with **post-hoc XAI methods** by **13%**.
- **Fine-tuned** LLMs (T5/BART) to auto-draft incident reports from sensor data, assisting early incident localization.

Research Assistant   **[remote]**
TESLAB, NTU Singapore   *Feb 2021 – May 2022*

- Built **multimodal-to-image translation** pipeline (U-Net-style, GANs) for topology optimisation of 2D/3D structures, achieving **91–99%** accuracy, enabling near real-time optimisation.
- Deployed **real-time pipeline** (Docker, Flask/FastAPI) to replace heavy simulation models.

Machine Learning Intern   **Baku, Azerbaijan**
ATL Tech   *Jan 2019 – Jun 2019*

- Contributed to the development of a **speech recognition system** (TensorFlow, SciPy) for aviation training simulation.
- Performed **feature engineering** and preprocessing of **unstructured audio data** (spectrograms, MFCCs), training LSTM and Hidden Markov Models on 30K+ cockpit command samples.

Sumer Internship   **Ankara, Turkey**
ImageLab, Middle East Technical University   *Jun 2018 – Sep 2018*

- Built a deep learning pipeline for ball-position estimation in football, improving tracking camera accuracy during occlusion through end-to-end data preparation and feature engineering.

Skills

- **Architectures:** Computer Vision (CNNs 2D/3D, Vision Transformers), Generative Models (VAEs, GANs), Natural Language Processing (Transformers/LLMs), Vision–Language Models (CLIP), Graph Neural Networks (GCN, GAT)
- **Technical:** C++, Python (PyTorch, TensorFlow/Keras, Hugging Face), SQL, Spark, FastAPI, Flask, Docker, AWS, MLflow, CI/CD
- **Other:** Research documentation, cross-functional teamwork, communication
- **Languages:** Azerbaijani (native), English (C1), Turkish (C1), German (B1)