

# ANAR AMIRLI

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## EDUCATION

### M.Sc. Computer Science

Universität des Saarlandes

Apr 2020–Aug 2025  
Saarbrücken, Germany

- Graduated with **1.0 thesis grade** (best possible); **DAAD Scholarship** recipient

- **Master's thesis:** Beyond Heatmaps: Graph-based Concept Reasoning for Interpretable Visual Models

- **Extracurriculars:** AI governance reading group, Modern Jazz Dance Club

### B.Eng. Computer Engineering

Baku Engineering University

Sep 2014–Jun 2019  
Baku, Azerbaijan

- Graduated with **1.3 grade** and **Honors; Government Scholarship** recipient

- **Extracurriculars:** ICT Robotics Team, TEDxQafqazUniversity

## EXPERIENCE

### Research Fellow–Intern

AI Safety Saarland

Nov 2025–present  
Saarbrücken, Germany

- Conducting research on evaluating representational and allocational biases in large language models (LLMs) and vision-language models (VLMs).

- Collaborating with interdisciplinary teams on interpretability, AI safety, and AI governance.

### Research Assistant & Thesis (Explainable AI)

IML, DFKI GmbH

Apr 2023–Aug 2025  
Saarbrücken, Germany

- Developed self-explainable vision model, outperforming CBM baselines by ~3% on medical imaging.

- Benchmarked VLMs (CLIP, MedCLIP) for diagnostic interpretability in medical imaging.

- Designed and conducted large-scale statistical evaluations of the reliability of self-explainable models.

### Working Student (Machine Learning)

SSE, DFKI GmbH

Nov 2021–Sep 2022  
Saarbrücken, Germany

- Developed and deployed a self-supervised anomaly detection system for Schott AG.

- Improved localization accuracy by 13% using explainability.

- Fine-tuned LLMs (T5/BART) for automated incident reporting.

### Research Assistant (Computer Vision)

TESLAB, Nanyang Technological University

Feb 2021–May 2022  
Singapore (remote)

- Built multimodal generative framework for 2D/3D topology optimization (91–99% accuracy).

- Implemented and benchmarked diffusion models, VAEs, and GANs for generative shape design.

### Intern (Machine Learning)

ATL Tech

Jan 2019–Jun 2019  
Baku, Azerbaijan

- Developed a speech-to-text recognition system for aviation training simulators.

- Engineered spectrogram/MFCC features; trained LSTM/HMM models.

### Intern (Data Science & Machine Learning)

ImageLab, Middle East Technical University

Jun 2018–Sep 2018  
Ankara, Turkey

- Built ball position estimation model for football tracking.

- Processed and analyzed large-scale, multi-season football match data.

### Software Developer

NSPSOLUTIONS LLC

Sep 2017–Jun 2018  
Baku, Azerbaijan

- Developed mobile app backend integrations for Opal Transfer LTD.

## TECHNICAL SKILLS

**Certifications:** High Level Computer Vision (MPI); Machine Learning Solutions (AWS); Generative AI with LLMs (AWS)

**Courses:** Machine Learning, Data Science, Neural Networks, Statistics, Gradient Boosting, Generalized Additive Models, NLP

**Programming:** Python (PyTorch, TensorFlow, SciPy, sklearn, OpenCV, Pandas, XGBoost), C++, Java, MATLAB, R

**MLOps & Others:** AWS, MLflow, Docker, Databricks, CI/CD, FastAPI, Flask, AWS, Airflow, GPU computing, Linux

**Data:** SQL, Spark, MySQL, MongoDB

## SOFT SKILLS

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**Languages:** Azerbaijani (native), English (fluent), Turkish (fluent), German (intermediate)

**Other:** Intercultural competence, teamwork, adaptability, problem-solving, critical thinking, creativity

### Experience Demonstrating Soft Skills

Service Staff, Old Murphy's Irish Pub Saarbrücken

Apr 2022–Nov 2025

- Delivered clear and friendly communication to diverse international customers.
- Proven ability to stay calm, efficient, and reliable in fast-paced and high-pressure situations.
- Worked closely with a diverse team, strengthening teamwork and coordination skills.

## PROJECTS

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### Concept-Based Explainable Model | PyTorch, OpenCV, SciPy | Thesis



- Built an ante-hoc explainable model using GATs and NMF-derived concepts for dermatology images.
- Achieved strong generalisation and surpassed baseline CBMs in several settings.

### Anomaly Detection & Reporting | Hugging Face, Python, FAST API, Docker | SPAICER project



- Built anomaly detection and localisation systems using autoencoders and post-hoc XAI.
- Fine-tuned LLMs to generate structured incident reports from sensor data.

### Generative Models for Topology Optimisation | PyTorch, TensorFlow, OpenCV | Grant-funded Project



- Used GANs and diffusion models to generate optimised 2D/3D structural designs.
- Mapped multimodal physical inputs to high-quality design outputs.

### CNN Feature Visualisation | PyTorch | Mini Project



- Implemented gradient-based CNN feature visualisation.

### Human Activity Recognition | SciPy, Scikit-learn, TensorFlow | Mini Project



- Trained LSTM models for multivariate time-series classification.

### Information Retrieval Pipeline | Python | Mini Project



- Built a TF-IDF + BM25 two-stage retrieval system.

### Ball Position Prediction | Python, dlib C++ | Internship Project



- Predicted football ball positions from optical tracking data.

## PUBLICATIONS

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- Unsupervised multi-sensor anomaly localization with explainable AI. Ameli, M., Pfanschilling, V., **Amirli, A.**, Maaß, W., Kersting, K. *Artificial Intelligence Applications and Innovations*, Springer, 2022. DOI: 10.1007/978-3-031-08333-4\_41

For the full publication list, see Google Scholar.

## HOBBIES

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- Cooking (trained cook)
- Reading (biopolitics, structuralism, feminism)
- Pottery
- Dancing
- Table Tennis
- Cycling