# ANAR AMIRLI

66111 Saarbrücken, Germany
LinkedIn GitHub anaramirli.com anar.amirli@gmail.com

## EDUCATION

**M.Sc. Computer Science** Oct 2019–Aug 2025
Universität des Saarlandes 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** Sep 2014–Jun 2019
Baku Engineering University Baku, Azerbaijan

- Graduated with **1.3 grade** and **Honors**; **Government Scholarship** recipient
- **Extracurriculars**: ICT Robotics Team, TEDxQafqazUniversity

## EXPERIENCE

**Research Fellow–Intern** Nov 2025–present
AI Safety Saarland 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)** Apr 2023–Aug 2025
IML, DFKI GmbH 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)** Nov 2021–Sep 2022
SSE, DFKI GmbH 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)** Feb 2021–May 2022
TESLAB, Nanyang Technological University 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)** Jan 2019–Jun 2019
ATL Tech Baku, Azerbaijan

- Developed speech recognition for aviation training simulators.
- Engineered spectrogram/MFCC features; trained LSTM/HMM models.

**Intern (Data Science & Machine Learning)** Jun 2018–Sep 2018
ImageLab, Middle East Technical University Ankara, Turkey

- Built ball position estimation model for football tracking.
- Processed and analyzed large-scale, multi-season football match data.

**Software Developer** Sep 2017–Jun 2018
NSPSOLUTIONS LLC 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, Computer Vision, Natural Language Processing
**Programming**: Python (PyTorch, TensorFlow, SciPy, sklearn, OpenCV, HF), C++, Java, MATLAB, R
**MLOps & Tools**: MLflow, Docker, CI/CD, FastAPI, Flask, AWS, Airflow, GPU computing, Linux, secure coding
**Data**: SQL, Spark, MySQL, MongoDB

## SOFT SKILLS

**Languages**: Azerbaijani (native), English (fluent), Turkish (fluent), German (intermediate)
**Other**: Intercultural competence, teamwork, adaptability, problem-solving, critical thinking, creativity

**Experience Demonstrating Soft Skills** Apr 2022–Nov 2025
Service Staff, Old Murphy's Irish Pub Saarbrücken

- 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

**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

- 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

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