

# ANAR AMIRLI

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## EDUCATION

### Universität des Saarlandes

*M.Sc. Computer Science*

Saarbrücken, Germany  
Oct 2019 – Aug 2025

- **Achievements:** Grade 2.4 | Deutscher Akademischer Austauschdienst (DAAD) Scholarship
- **Activities:** Student Reading Group (focus on implications of AI governance for biopolitics) | Dance Club (Modern Jazz, Hip-Hop)

### Baku Engineering University

*B.Eng. Computer Engineering*

Baku, Azerbaijan  
Sep 2014 – Jun 2019

- **Achievements:** Grade 1.3 | Graduated with Honors | Government Scholarship for Academic Excellence
- **Activities:** ICT Robotics Team | TEDxQafqazUniversity

## WORK EXPERIENCE

### AI Safety Saarland

Research Fellow — Intern

Saarbrücken, Germany  
Nov 2025 – present

- Researching **evaluation and mitigation of social biases in VLMs**.
- Collaborating with interdisciplinary teams on interpretability, AI safety, and AI governance.

### IML, German Research Center for AI (DFKI GmbH)

Research Assistant & Thesis (Explainable AI / Medical Imaging)

Saarbrücken, Germany  
Mar 2023 – Aug 2025

- Designed and developed a **self-explainable vision model for dermatological diagnosis**, surpassing CBM baselines by ~3%.
- Benchmarked explainability methods based on **vision–language models (e.g., CLIP, MedCLIP)** to assess representation quality and interpretability in medical imaging.
- Conducted **large-scale statistical analyses** to evaluate the consistency of explanations from self-explainable models.

### SSE, German Research Center for AI (DFKI GmbH)

Research Assistant (Machine Learning)

Saarbrücken, Germany  
Nov 2021 – Sep 2022

- Developed and deployed a **self-supervised anomaly detection** system for manufacturing lines at Schott AG.
- Improved anomaly localization accuracy by **13%** using post-hoc explainability techniques.
- **Fine-tuned transformer-based LLMs** (T5, BART) to automatically generate textual incident report from anomalous sensor data.

### TESLAB, Nanyang Technological University

Research Assistant (2D/3D Computer Vision)

Singapore (remote)  
Feb 2021 – May 2022

- Developed a **multimodal generative framework** for 2D/3D topology optimization achieving 91–99% reconstruction accuracy.
- Implemented and compared **diffusion models, VAEs, and GANs** for generative modelling of 2D/3D structural design shapes.

### ATL Tech

Machine Learning Intern

Baku, Azerbaijan  
Jan 2019 – Jun 2019

- Assisted in developing a **speech recognition system** for flight training simulations at the national aviation academy.
- Engineered audio features (spectrograms, MFCCs) and trained LSTM/HMM models on cockpit command data.

### ImageLab, Middle East Technical University

Data Science & Machine Learning Intern

Ankara, Turkey  
Jun 2018 – Sep 2018

- Designed and developed a ball position **estimation ML model** for football tracking systems.
- Processed **large-scale match data** over multiple seasons, performing **feature engineering**, and **visualization**.

### NSPSOLUTIONS LLC

Software Developer

Baku, Azerbaijan  
Sep 2017 – Jun 2018

- Contributed to the mobile app development for Opal Transfer LTD, responsible for backend integration (HTTP APIs to Java).

## SKILLS

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- **Machine Learning:** CNNs, GNNs, transformers, LLMs, VLMs, unsupervised learning, contrastive learning, active learning
- **Programming:** Python (PyTorch, TensorFlow, SciPy, Scikit-learn, OpenCV, Hugging Face), C++, Java, MATLAB, R
- **Data:** SQL, Spark, MySQL, MongoDB
- **MLOps & Tools:** MLflow, Docker, CI/CD, FastAPI, Flask, AWS, Airflow
- **Languages:** Azerbaijani (native), English (C1), Turkish (C1), German (B1)
- **Others:** GPU Computing, Secure Coding, Linux

## CERTIFICATES

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High Level Computer Vision (MPI); Optimization for Machine Learning (CISPA); Developing Machine Learning Solutions (AWS); Generative AI with Large Language Models (AWS)

## PUBLICATIONS [\(Full Scholar Link\)](#)

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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

## PROJECTS

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**Concept-Based Medical Image Classifier** (major project — Link: [\[1\]](#))

Built a GAT + NMF concept discovery model for interpretable dermatology classification.

**Industrial Anomaly Detection** (major project — Links: [\[2\]](#), [\[3\]](#), [\[4\]](#), [\[5\]](#), [\[6\]](#))

Developed autoencoder-based anomaly detection and fine-tuned LLMs for automated incident reporting.

**2D/3D Generative Design Models** (major project — Links: [\[7\]](#), [\[8\]](#))

Implemented Generative AI models for multimodal topology optimisation

**CNN Feature Visualisation** (mini project — Link: [\[9\]](#))

Implemented gradient-based feature visualisation for deep CNNs.

**Human Activity Recognition** (mini project — Link: [\[10\]](#))

Trained LSTM models for multivariate time-series classification.

**Information Retrieval Pipeline** (mini project — Link: [\[11\]](#))

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

**Ball Position Estimation** (mini project — Link: [\[12\]](#))

Predicted football ball positions from optical tracking data.

## HOBBIES

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Reading (mostly on Biopolitics, Structuralism, Feminism); Doing pottery; Dancing; Playing tar and mixing vinyl records.