# ANAR AMIRLI

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## SUMMARY

Experience in research and development of data science, machine learning, vision-language models and explainable AI

## EMPLOYMENT

**DFKI GmbH**                                                                                            Saarbrücken, Germany
**Research Assistant & Thesis (Machine Learning)**                                         *Mar 2023 – Aug 2025*

- Designed and developed a **self-explainable vision model for dermatological diagnosis**, surpassing CBM baselines by ~3%.
- Leveraged **vision-language models** (e.g., CLIP, MedCLIP) to benchmark explainability across medical datasets.
- Conducted **large-scale statistical analyses** to evaluate the consistency of explanations from self-explainable models.

**DFKI GmbH**                                                                                            Saarbrücken, Germany
**Working Student (Data Science)**                                                             *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 methods.
- **Fine-tuned transformer-based LLMs** (T5, BART) to automatically generate textual incident report from anomalous sensor data.

**TESLAB, Nanyang Technological University**                                            *Singapore* (remote)
**Research Assistant (Computer Vision)**                                                     *Feb 2021 – May 2022*

- Developed a **multimodal generative AI** framework for 2D/3D topology optimization, achieving 91–99% accuracy and near real-time performance.
- Conducted an extensive literature review on **diffusion models**, **VAEs**, and **GANs** to guide framework design.

**ATL Tech**                                                                                                    Baku, Azerbaijan
**Machine Learning Intern**                                                                          *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**                                          Ankara, Turkey
**Data Science & Machine Learning Intern**                                               *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**                                                                               Baku, Azerbaijan
**Software Developer**                                                                                   *Sep 2017 – Jun 2018*

- Developed multi-feature Android apps with backend integration (HTTP APIs to Java)
- Contributed to the mobile app development for **Opal Transfer LTD**.

## EDUCATION

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

- Grade: 2.4 | Fully Funded by Deutscher Akademischer Austauschdienst (DAAD) Scholarship

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

- Grade: 1.3 | Graduated with Honors | Government Scholarship for Academic Excellence

## CERTIFICATES

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

## SKILLS

- **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

## PUBLICATIONS (Full Scholar Link)

**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

## HOBBIES

Reading in social theory (Structuralism, Biopolitics, Feminism); Doing pottery and ceramics; Playing tar, electric guitar, and mixing vinyl records; Cooking (used to work in a family restaurant)