

# Anar Amirli

📍 Saarbruecken, Germany

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## Education

### Universität des Saarlandes

*M.Sc. Computer Science*

*Saarbrücken, Germany*

*Oct 2019 – Aug 2025*

- DAAD Full Graduate Scholarship (2019–2022)
- Focus on *Statistics, Machine Learning, AI, and Data Science*
- Thesis: *"Beyond Heatmaps: A Visual Concept-Based Explainable Model via Graph Attention Networks"* — Grade: 1.0

### Baku Engineering University

*B.Eng. Computer Engineering*

*Baku, Azerbaijan*

*Sep 2014 – Jun 2019*

- Graduated with Honours, awarded the Ministry of Science & Education Scholarship

## Selected Work Experience

### Research Assistant & Master's Thesis Student

**DFKI - German Research Center for Artificial Intelligence**

*Focus Area: Explainable AI*

*Saarbrücken, Germany*

*Mar 2023 – Aug 2025*

- Built an **ante-hoc interpretable AI** framework with Graph Neural Networks, enabling detection of suspicious patterns and improving trust in skin cancer detection.
- **Improved skin cancer diagnosis accuracy** by ~3% over baseline, while providing transparency through unsupervised concept-based explanations of pathological features.
- Delivered full research-to-prototype pipeline, producing **clinician-ready explainability dashboards** and model evaluation tools for validating AI-driven skin cancer diagnoses.

### Research Assistant

**DFKI - German Research Center for Artificial Intelligence**

*Focus Area: Data Science*

*Saarbrücken, Germany*

*Nov 2021 – Sep 2022*

- Developed and deployed a **real-time anomaly detection system** (FastAPI, Docker, AWS) for SCHOTT AG manufacturing lines, **boosting anomaly localization accuracy by 13%** with post-hoc methods and reducing defect-related downtime.
- Designed **scalable ML workflows in cloud-ready containers**, integrating detection APIs with dashboards to support rapid operational decisions.
- Conducted **ad-hoc exploratory analysis** of large-scale incident logs and suspicious cases, and **fine-tuned domain-specific LLMs** (BERT, GPT, LLaMA) to automatically summarize reports, significantly reducing manual workload.

### Junior Applied Scientific

**TESLAB, NTU Singapore**

*Focus Area: Applied AI*

*[remote]*

*Feb 2021 – May 2022*

- Developed a **multimodal-to-image translation pipeline** using GANs and Diffusion Models, achieving **91–99%** reconstruction accuracy and enabling near real-time topology optimisation of 2D/3D structures.
- Supported engineering teams by replacing compute-heavy solvers with lightweight generative samples.

### Internship

**ATL Tech**

*Focus Area: Machine Learning*

*Baku, Azerbaijan*

*Jan 2019 – Jun 2019*

- Contributed to the development of a **real-time speech recognition system** for the Universal Virtual Simulator Project at the Azerbaijan National Aviation Academy.

### Summer Internship

**ImageLab, Middle East Technical University**

*Focus Area: Data Science*

*Ankara, Turkey*

*Jun 2018 – Sep 2018*

- Developed a deep learning model for **ball position estimation** in football, assisting tracking cameras during occlusion.
- Applied **statistical modelling** and ML techniques (logistic regression, decision trees, CNNs) for **sports analytics**.

## Selected Publication

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**Unsupervised multi-sensor anomaly localization with explainable AI**

Springer, June 2022

Mina Ameli, **Anar Amirli**, Wolfgang Maaß, Kristian Kersting

DOI: [10.1007/978-3-031-08333-4\\_41](https://doi.org/10.1007/978-3-031-08333-4_41)

## Skills

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**AI/ML:** Risk & fraud detection, Anomaly detection, Explainable AI, Data Science, ML, Graph ML, CV, NLP

**Programming/Data:** Python, C++, SQL, Spark, Pandas, NumPy

**Frameworks:** PyTorch, TensorFlow/Keras, Scikit-learn, MLflow

**Cloud/Deployment:** AWS (SageMaker, S3, EC2), Docker, Kubernetes (basic), FastAPI, Git, CI/CD

**Languages:** Azerbaijani (native), English (C1), Turkish (C1), German (B1)

## Interests

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AI ethics and social studies; Long-distance cycling; DJing and vinyl mixing (funk & soul).