Ahmad **Aloradi**

SIGNAL PROCESSING ENGINEER · DEEP LEARNING AND AUDIO PROCESSING EXPERT

91054 Buckenhof, Bavaria, Germany

☐ (+49) 159 06500693 | ✉ ahmad.aloradi94@gmail.com | 🔗 ahmad-aloradi |

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Education

Ph.D. in Signal Processing

Erlangen, Germany

FRIEDRICH-ALEXANDER-UNIVERSITÄT ERLANGEN-NÜRNBERG (FAU) - DEPARTMENT OF DATA SCIENCE

Oct. 2024 - Ongoing

- Topics: Adversarial and Domain Shift Robustness for Speaker Recognition
- Advisors: Prof. Dr. Daniel Tenbrinck, Akad. Rat and Prof. Dr. ir. Emanuel Habets

M.Sc. in Signal Processing

Erlangen, Germany

FRIEDRICH-ALEXANDER-UNIVERSITÄT ERLANGEN-NÜRNBERG (FAU)

Oct. 2017 - Oct. 2020

- Grade: 1.5 (*Very Good*)
- Thesis: End-to-End Text-Independent Speaker Verification Using Deep Metric Learning
- Thesis advisors: Dr. Wolfgang Mack and Prof. Dr. ir. Emanuel Habets

B.Sc. in Electrical Engineering

Dhahran, Saudi Arabia

KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS (KFUPM)

Jan. 2013 - Jun. 2017

- Cumulative GPA: 3.77/4.0 (*First Honors*)
- Thesis: Optical Mouse-Based Odometer and Motion Tracker

Experience

Research Associate

Erlangen, Germany

FRAUNHOFER IIS

Apr. 2021 - Present

- Member of the text-to-speech TTS team, which has been developing a multi-lingual, enterprise-grade TTS system
    - Allowing for **zero-shot** inference
    - Improving the speaker similarity between the reference human voice and synthesized speech
    - Experience in maintaining and delivering software to customers as Docker images

PhD Work in Robust Speaker Recognition Using Deep Neural Networks

Erlangen, Germany

INTERNATIONAL AUDIOLABS - FAU

Apr. 2021 - Jul. 2023 (incomplete)

- Developing robust speaker recognition and detection systems in multi-talker environments using deep neural networks
    - **Lead-author** for two peer-reviewed publications (publications section)
    - Supervised 2 master students in the Audio Processing Seminar

Research Assistant

Erlangen, Germany

FRAUNHOFER IIS

Oct. 2020 - Mar. 2021

- Research assistant in the domain of speaker verification
    - Used contrastive learning methods (mainly triplet loss) to build a verification system with equal error rate $\approx 6\%$

Student Assistant (Werkstudent)

Erlangen, Germany

FRAUNHOFER IIS

Mar. 2018 - Feb. 2020

- Working student in the domain of speech dereverberation. Implemented a novel algorithm for online dereverberation in a VST Plugin (based on multi-channel linear prediction).

Graduate Teaching Assistant (Werkstudent)

Erlangen, Germany

FRIEDRICH-ALEXANDER-UNIVERSITÄT ERLANGEN-NÜRNBERG (FAU)

Oct. 2018 - Feb. 2019

- Lab assistant for the 'Machine Learning in Signal Processing' at the LMS department (master level course)
- Assisted the students throughout in creating an end-to-end pipeline for lane-detection, including data-simulation and *U-Net*-like model training

Undergraduate Teaching Assistant

Dhahran, Saudi Arabia

KING FAHD UNIVERSITY OF PERTOLEUM AND MINERALS (KFUPM)

Sep. 2014 - May. 2017

- Took over the role the teaching assistant for 5 different courses in the Electrical Engineering Dept.

Skills

Programming	**Python** (Expert), MATLAB,. C/C++ (Beginner), **shell-scripting**
Machine Learning	**PyTorch** (Expert), **PyTorch Lightning** (Expert), **Numpy**, **Scikit-learn**, **Pandas**, logging (Tensorboard, Weights & Biases, MLflow), Docker
Operating Systems	Microsoft Windows, Linux, Mac
Others	**Git**, continuous integration (**CI**), High-performance computing (**HPC**) experience with slurm/torque workload managers, LaTeX, Beamer, TikZ, Microsoft Office
Languages	English (Native-level), Arabic (Native), German (Telc B1 - 284/300)
Soft skills	Good communication and public speaking skills: former vice-chairman in the IEEE student branch at KFUPM

Publications

Conference papers

Ahmad Aloradi, Wolfgang Mack, Mohamed Elminshawi, Emanuël A. P. Habets, *Speaker Verification in Multi-Speaker Environments Using Temporal Feature Fusion*, EUSIPCO, Belgrade, Aug. 2022

Ahmad Aloradi, Mohamed Elminshawi, Srikanth Raj Chetupalli, Emanuël A. P. Habets, *Target-Speaker Voice Activity Detection in Multi-Talker Scenarios: An Empirical Study*, ITG, Aachen, Sep. 2023

Honors & Awards

2017	**2nd Best Thesis**, Awarded the 2nd best thesis in the Electrical Engineering Dept. at KFUPM	*Saudi Arabia*
2013	**Full-Undergraduate Scholarship**, Awarded to outstanding non-Saudi high school graduates	*Saudi Arabia*