

# ARHAM BIN TARIQ

Munich, Germany    arhambintariq.com    arhambintariq

## WORK EXPERIENCE

### Research Assistant - ML Enhanced Sensors

Fraunhofer EMFT

July 2023 – August 2025    Munich

- Developed and evaluated ML models end-to-end, including data collection, labelling, pre-processing, training and deployment
- Optimised models to reduce size and latency, and deployed them on embedded devices using TensorFlow Lite and STM32 CubeAI

### Research Assistant - Edge AI Systems

Fraunhofer EMFT

October 2021 – June 2023    Munich

- Trained, optimised and deployed neural networks for time-series sensor data on STM32 Microcontrollers
- Built a framework to systematically evaluate accuracy, inference time, and memory usage of deployed models on embedded devices

### Research Assistant - Deep Learning for Computer Vision

Institute for Photonic Systems - Hochschule Weingarten

December 2020 - April 2021    Weingarten

- Built the deep learning module for an app to predict shoe size from foot image contours

### Intern - Software Architecture Development

ZF Friedrichshafen AG

August 2019 – February 2020    Friedrichshafen

- Developed ECU modules for automated software integration, flash process and runtime analysis

## EDUCATION

### M.Sc. Robotics, Cognition, Intelligence

Technical University of Munich

October 2021 - Ongoing

- Thesis:** Event Detection in High-frequency Multivariate Time Series for Tiny Machine Learning
- Focus Areas:** Probabilistic Machine Learning, Robust Machine Learning, Foundation Models, Optimisation Algorithms

### B.Eng. Electrical Engineering and Information Technology

Ravensburg-Weingarten University of Applied Sciences

March 2017 – August 2021

- Thesis:** Navigation Control for an Autonomous Mobile Robot using Deep Reinforcement Learning
- Focus Areas:** Reinforcement Learning, Robot Motion Planning, Computer Vision, Real-time Systems

## PUBLICATIONS

### Conference Proceedings

- K. Axelsson, A. B. Tariq, G. Zerbib, M. Richter, and C. Kutter, "Self-sensing of piezoelectric actuators: Integrated bubble detection for reliable drug dosing," in *MikroSystemTechnik Kongress*, 2023.

## SKILLS

PythonC/C++JavaHTMLCSSJavaScript

PyTorchTensorFlowTensorFlow LiteNumPySciPyML FlowDVCLabel StudioTensorBoard

LinuxDockerLaTeXGitROSGazeboSTM32 Programming

## LANGUAGES

Urdu

English

German

Swedish

Japanese

## VOLUNTEERING

Mentor for International Students  
TUM Department of Informatics

Mentor for High School Students  
Rock Your Life München