



Ahmad Hassan Mirza

Master thesis student at Robert Bosch GmbH



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Technical Tools

Java, Python, C/C++, HTML, CSS, REST API-Design and development, Android development, ROS, Matlab, Computer Vision, Image processing, OpenCV, Machine Learning, Tensorflow, dlib, OpenRTOS, XML, Flask, Web-services, Batch Scripting, Docker, Adobe Photoshop, Adobe Illustrator, Enterprise Architecture.

Work Experience

Jan 2020 – Jul 2020

Master Thesis - Robert Bosch GmbH, Stuttgart, Germany.

Design and development of an intercompany software collaboration platform using Service Oriented Architecture and RestAPIs.

- Application of S.O.A and DevOps for development in a large company.
- Development of a platform that enables, offering tools and software as web services.
- ECU Base software build process migrated from monolithic to S.O.A.
- Development of a Machine Learning and Image Processing Service.
- Allows training of the base model on new data by calling a web service API without any coding and tool setup.

Jul 2019 – Dec 2019

Intern - Robert Bosch GmbH, Stuttgart, Germany.

Automation of ECU software build process for use in software sharing platform.

- Development of scripts, in python and batch, to automate the build process for ECU software.
- Enable software sharing between OEMs & Bosch.
- Proposed and successfully migrated the code base to modularized architecture to enable easier maintenance of CI & CD pipeline for the software-sharing project.

Jan 2019 – Jun 2019

Working Student - Fachhochschule Dortmund, Germany.

Project MoRoP (Mobile Robot Platform).

- Development of navigation controller using laser scanner, odometry and ROS Navigation Stack.
- Development of a partner Android application to map the surroundings of the robot using on-board laser scanner.
- Path planning to navigate to a specified goal using the partner application.

Nov 2019 – Jun 2019

Research Assistant - Fachhochschule Dortmund, Germany.

Project Avatar.

Design and Development of an Android application capable of performing lip reading using only image processing.

- Research to identify optimum methods to solve the problem.
- Used dlib (cross-compiled for android), Tensor Flow, Python and Android platform to develop the application.

Nov 2013 – Jul 2014

Research Associate (Lab Engineer) - CIIT, Lahore, Pakistan.

Lab - Digital Electronics and Microcontrollers

May 2011 – Oct 2013

Software Quality Assurance Engineer - Gameview Studios, Lahore, Pakistan.

- QA Engineer on various game development projects.
- Writing and executing test cases.
- Took part in all the testing phases from development to release.
- Worked as concept design engineer with the graphics dev team on one of the projects.

Education

Oct 2017 – Present

M.Eng Embedded Systems for Mechatronics - 1.7/4.0

Fachhochschule Dortmund, Dortmund, Germany.

Focus: Software development, Machine Learning for computer vision and image processing.

Projects Highlights:

- Robot with maze navigation to reach the destination – using Embedded C (OpenRTOS).
- Architectural designing of “Autopilot Landing System” – using Enterprise Architect.
- “Follow Me” – Robots that follow an IR source, with convoy mode – using Arduino.
- Implementation of serial communication protocol on LatticeXP2/17E FPGA – using VHDL and Active-HDL for simulations.
- Implementation of several process scheduling algorithms for App4MC platform.

Aug 2014 – Jun 2016

MSc Micro and Nano Systems Technology

University College of South East Norway.

Focus: BioMEMS, Fabrication and Characterization of Lab-on-Chip devices.

Oct 2006 – Aug 2010

BSc Electrical Engineering

University of Central Punjab, Lahore, Pakistan.

Focus: Embedded systems and digital electronics.

Languages

	Speaking	Listening	Reading
English	C2	C2	C2
German	A2	B1	B1
Urdu	Native		
Punjabi	Regional language		

Publications

- ITO-Free 3D MEMS Photodetector for Point-Of-Care Bio Sensing Devices.
IEEE-NIH 2016 Special Topics Conference on Healthcare Innovations and Point-of-Care Technologies.
- Comparison and Implementation of Open-Source Face Detection & Tracking Systems on Android Devices for use in home-based Speech Therapy - Poster
BMT 2019 - 53rd Conference of the German Society for Biomedical Engineering (DGBMT within VDE).

Hobbies

- Painting & Sketching.
- Road cycling.
- Volleyball & Tennis.
- Gaming.
- Reading up and experimenting with technology (software & libraries).