Muhammad Saad Nawaz

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PERSONAL SUMMARY

A motivated engineer with experience in automotive radar development across different tiers of industry, with an ambition to contribute to product solutions and strategy development for driver assistance and automated driving domains.

WORK EXPERIENCE

Senior System Engineer- Radar & Lidar Perception
Audi AG (Mar 2025 – present)

Responsibilities:
- Function ownership: “Radar & Lidar Perception” incl. definition of system architecture, feature implementation, delivery schedule, and functional requirements of sensor hardware

Senior System Development Engineer: Radar Perception
CARIAD SE (Jul 2022 – Feb 2025)
CARIAD SE (Jul 2020 – Jun 2022) – corporate lending within VW Group (Employee of Audi AG)

Responsibilities:
- Product ownership: “Front Long-range Radar Perception” and “360° Radar Perception” incl. definition of product strategy, roadmap, system architecture, feature implementation, delivery schedule, and functional requirements of perception functions
- Development of perception modules (signal processing and object perception – tracking & classification) according to functional use cases of highly-automated driving functions (SAE L2/L3/L4)
- Buildup and leadership role of the Radar-Perception-Team in the company

(Function) Development Engineer- Front-radars Perception
Audi AG (Jan 2019 – Jun 2020)

Responsibilities:
- Function ownership: “Front-radars Perception” incl. definition of system architecture, feature implementation, delivery schedule, and functional requirements of sensor hardware
- Development of perception modules (signal processing and object perception – tracking & classification) according to functional use cases of highly automated driving functions (SAE L2/L3/L4)

ADAS Software Applications Engineer
NXP Semiconductors (Dec 2015 – Dec 2018)

Responsibilities:
- Development of automotive radar software based on PowerPC microprocessor with a focus on radar signal processing

- Technical owner (demo) radar sensor: introduction of the radar sensor to automotive suppliers and OEMs, integration of software elements in sensor, and enablement of worldwide customer support
- Embedded system development (hardware & software) of ADAS prototypes and evaluation platforms
- Cross-validation of ADAS radar MMICs with automotive microprocessors

Master Thesis: Development of a Communication Solution for State-of-the-art Automotive Radar Application
Freescale mmW-System Innovation Center, Freescale Semiconductor (May 2015 – Oct 2015)

EDUCATION

Doctorate of Engineering in Electrical Engineering (ongoing)
RWTH Aachen University (Oct 2021 – est. Mar 2028)

Master of Science in Communications Engineering
Technical University Munich (Oct 2013 – Oct 2015)

(Specialization: Communications Electronics)

Bachelor of Science in Computer Engineering
COMSATS Institute of Information Technology, Islamabad (Feb 2009 – Jan 2013)

TRAININGS & CERTIFICATIONS

Generative Adversarial Networks
Coursera (Oct 2021 – Dec 2021)

Successful Negotiation: Essential Strategies & Skills
Coursera (Aug 2021 – Oct 2021)

Product Manager Nanodegree
Udacity (Mar 2021 – Jul 2021)

Deep Reinforcement Learning Nanodegree
Udacity (Mar 2020 – Jun 2020)

Self-Driving Car Engineer Nanodegree
Udacity (Feb 2017 – Mar 2018)

PROFESSIONAL SKILLS

Programming Skills: C, C++, Python, MATLAB, Pytorch, Microcontroller C, Assembly Language, VHDL, Verilog, SystemC

Technical competencies: automated driving, radar sensors, radar perception, signal processing, artificial intelligence, deep learning, embedded systems

Management & leadership competencies: planning ability, analytical skills, adaptability, teamwork, focused and target-oriented

AWARDS & HONORS

Institute Gold Medal
Awarded by CIIT in BSCE (Apr 2013)

Campus Silver Medal
Awarded by CIIT Islamabad in BSCE (Apr 2013)

Best Engineering Design Award
Robian2011 robotics competition (Dec 2011)

PUBLICATIONS & PATENTS

Generative Adversarial Synthesis of Radar Point Cloud Scenes
Muhammad Saad Nawaz, Thomas Dallmann, Torsten Schön, Dirk Heberling
ICMIM 2024; 7th IEEE MTT Conference, Boppard, 2024, pp. 69-72

Method for operating a radar device of a vehicle, radar device and vehicle
Muhammad Saad Nawaz
Granted: DE 10 2022 115 091 B3, Filed: CN 117 233 767 A

Method for Operating a Sensor Circuit in a Motor Vehicle, correspondingly Operable Sensor Circuit and Motor Vehicle with the Sensor Circuit
Muhammad Saad Nawaz
Filed: DE 10 2021 103 134 A1, WO 2022 171 460 A1, US 2024 012 5604 A1, CN 116 964 481 A

Method for Determining Performance Information Describing Potential Degradation for a Radar Sensor, Motor Vehicle, Computer Program and Electronically Readable Data Carrier
Muhammad Saad Nawaz
Granted: DE 10 2021 101 247 A1

Method for Operating a Radar Sensor, Radar Sensor, Motor Vehicle, Computer Program and Electronically Readable Data Carrier
Muhammad Saad Nawaz
Filed: DE 10 2021 100 526 A1, WO 2022 152 481 A1

Motor Vehicle with a Radar Sensor Arrangement and Method for Synchronizing Radar Sensors
Muhammad Saad Nawaz, Winfried Justus, Matthias Ewert, Alin Jianu
Granted: DE 10 2020 134 561 B3; Filed: WO 2022 135 780 A1

Motor Vehicle with a Radar Sensor Arrangement and Method for Synchronizing Radar Sensors
Muhammad Saad Nawaz, Winfried Justus, Matthias Ewert, Alin Jianu
Granted: DE 10 2020 134 560 B3

Method for Operating a Radar Device and Motor Vehicle Comprising a Plurality of Radar Sensors
Muhammad Saad Nawaz, Winfried Justus
Filed: DE 10 2020 102 380 A1

Method and Processor for Determining Spatial Information regarding a Vehicle

Muhammad Saad Nawaz
Granted: US 11,221,393 B2, EP 3 683 596 B1

System and Method to Classify Objects using Radar Data
Muhammad Saad Nawaz
Filed: EP 3 748 392 A1

Data Acquisition Method and Apparatus for FMCW Radar System
Muhammad Saad Nawaz, Ralf Reuter
Granted: EP 3 499 266 B1, US 10,955,525 B2, CN 109917391 B

A New Improved Scheme for Combined Reduction of Acoustic Echo and Background Noise using NLMS Filters
Muhammad Saad Nawaz, Mansoor Khan
Journal of Space Technology, ISSN: 2077-3099, Vol. 3, No. 1, July 2013, pp 40-45

LANGUAGE SKILLS

English
Advanced proficiency (C1)

German
Advanced proficiency (C1)

Urdu
Native speaker (C2)