Aran Mohammad

Modeling and Control Engineer

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Experience

since 03/2021	**Research Associate,** Leibniz University Hannover (LUH) - Software development in MATLAB and Python for control, modeling, machine learning, optimization and motion planning (Link) - 6 publications on modeling and control of mechatronic systems - Co-responsible for project acquisition (€400,000) on sensor fusion and control - Taught a course (150 students) on robotics and machine learning - Mentoring of 23 Master's/Bachelor's students and 17 student assistants
03/2020 – 11/2020	**Research Intern and Master Student,** IAV GmbH, Gifhorn Physics-based and data-driven emission prediction (Links 1 and 2)
10/2019 – 12/2019	**DAAD-funded Research Intern,** UNESP, Bauru, Brazil Frequency domain analysis and system identification of CFRP structures
10/2018 – 12/2018	**Student Research Project,** IAV GmbH, Gifhorn Road grade estimation for longitudinally guided driver assistance systems (Grade: 1.0)
09/2016 – 01/2017	**Intern,** ContiTech Antriebssysteme GmbH, Hannover Conceptual design of a press unit using AutoCAD Mechanical and FEM
10/2014 – 01/2018	**Tutor for Control Engineering and Mechanics,** LUH Supervised tutorials with 50 students in fundamental modules

Education

since 03/2021	Ph.D. candidate in Mechanical Engineering, LUH
10/2017 – 12/2020	M.Sc. in Mechanical Engineering (Grade: 1.0, with distinction), LUH
04/2014 – 09/2017	B.Sc. in Mechanical Engineering (Grade: 2.2), LUH
10/2012 – 03/2014	Engineering and Business Administration, LUH
09/2010 – 07/2012	Abitur (Grade: 2.4), Kurt-Schwitters-Gymnasium Misburg, Hannover

Awards

Master's Degree	M.Sc. Mechanical Engineering with distinction (GPA: 1.0)
Dean's List	2nd out of 238 students in M.Sc. Mechanical Engineering
Research Award	Best Paper Award for an outstanding scientific publication

Skills

Software	MATLAB, Python, C++, ROS, Autodesk Inventor, Git, DaVinci Resolve, MS Office
Libraries	scikit-learn, PyTorch, Tensorflow, MuJoCo, OpenCV, SciPy
Languages	German (native), Kurdish (native), English (C1), French (B1)

Projects

System Design	**Design of a system architecture for robots** as part of the Ph.D. project - Kinematic and dynamic modeling and logic design in Simulink (Link) - Integration of camera, force, and inertial sensors via Python, C++ and ROS - Development of real-time capable model-based algorithms in MATLAB (Link)
Leadership	**Designing teaching formats**, focus of teaching activities Technical supervision and task coordination of a student team
Prototyping	**Programming of Mechatronic Systems**, course in the Master's program OOP of autonomous motion sequences for a mobile robot platform in C++