



M.Sc. Marcel Albus

RESEARCH ENGINEER

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Summary

Research engineer with 5+ years of industrial experience in software development, and 3+ years of experience in the field of factory automation using mathematical optimisation as well as assembly automation using Reinforcement Learning for robotics manipulation. Interested in problem-solving methods for challenging tasks, and learning new technologies and tools.

Work Experience

Fraunhofer Institute for Manufacturing Engineering and Automation IPA

Stuttgart, Germany

RESEARCH ENGINEER

April 2019 - Today

Research Engineer in the field of factory and robotic assembly automation using methods of optimization and machine learning with proficiency in the following fields:

- Assembly Line Balancing optimization for robotics and hybrid lines using mixed-integer programming.
- Usage of robotic assembly skills in combination with symbolic AI to solve a peg in hole task with real-world execution and evaluation.
- Learning of complex assembly tasks in physics simulation using Reinforcement Learning.
- Verification of Machine Learning detection models in safety-critical applications.
- Design and simulation of assistive robotics in highly changeable and dynamic environments.

hofer Powertrain

Nürtingen, Germany

DESIGN ENGINEER

September 2014 - January 2016

- Technical design, calculation and construction of endurance and extreme temperature test benches for automotive manufacturers.
- Investigation of double clutch systems in high performance transmission for motorcycles with more than 200 hp.

Education

University of Stuttgart

Stuttgart, Germany

MASTER OF SCIENCE IN MECHATRONICS

April 2016 - March 2019

- Specialized in software engineering and systems control, with a focus on automation applications.
- Master thesis in the field of reinforcement learning for human robot collaboration, "Deep reinforcement learning architecture for safety behaviour in robotics".
- Study thesis in the field of service robotics path planning, "Analysis and optimization of parameter sets for path control procedures of mobile service robotics in dynamic environments".
- Final grade 1,7.

University of Applied Sciences Albstadt-Sigmaringen

Albstadt, Germany

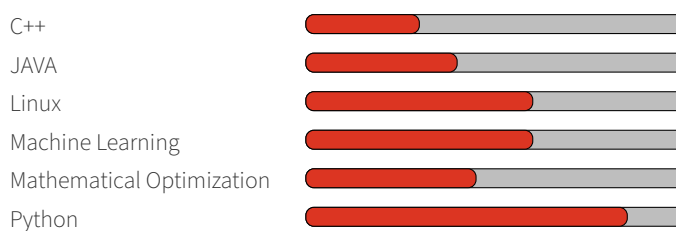
BACHELOR OF ENGINEERING IN MECHANICAL ENGINEERING

September 2012 - March 2016

- Bachelor thesis in the field of control engineering, "Design of a control algorithm for an airplane autopilot".
- Final grade 1,7.

Skills

Software



Engineering



Languages

