Leonce Mollerus

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Education

B. Eng Robotics, Technische Hochschule Ingolstadt — Ingolstadt, Sept 2023 – present

- Solid knowledge in modeling, control, and programming of industrial and mobile robotic systems
- Practical experience in sensor technology, actuators, as well as image processing and machine learning for robotic applications
- Proficiency in ROS (Robot Operating System) and software development in C, C++, Java, and Python
- Ability to develop safe and collaborative robotic systems in compliance with relevant standards
- Comprehensive understanding of mechanical, electrical, and information technology fundamentals of robotics

B. Eng Mechatronics (without degree), Technische Hochschule Ingolstadt — Ingolstadt, 2016 – 2019

- Mastery of engineering fundamentals in mechanics, electrical engineering, and computer science
- Ability to develop and program mechatronic systems using microcontrollers and FPGAs
- Competence in modeling, simulation, and control of dynamic systems
- Experience in hardware- and software-related integration as well as testing of complex mechatronic components
- Application of project management and economic fundamentals in technical projects

General university entrance qualification, Stadtgymnasium Detmold — Detmold, 2016

- Focus on Mathematics & Physics

Experience

Internship Robotics & Computer Vision, BMW AG — Munich, Feb 2024 – July 2024

- Work on collaborative robots (UR10e) with ROS2
- Agile software development in a team using Scrum
- Implementation of algorithms for 6D object detection and hand–eye calibration using MVTec Halcon and Python
- Development of CI/CD pipelines using GitHub Actions and Docker

Tutor, Schülernachhilfe1 Ingolstadt — Ingolstadt, 2019 – 2022

- Mathematics & Physics, grades 9–13

Tutor, Schuelerhilfe S.-Russer/Russer GbR — Ingolstadt, 2018 – 2019

- Mathematics & Physics, grades 5–13

Assistant in Production and Logistics Administration, A+T Klaus GmbH — Detmold, Sept 2017 – Sept 2017

- Processing of production orders and inventory maintenance

Internship Machining Mechanic, A+T Klaus GmbH — Detmold, July 2017 – Sept 2017

- Work on CNC milling and turning machines

Skills

Programming: Proficient with **Python**, **C/C++**, **Git**, and extensive experience with **ROS/ROS2**

Simulation and CAD Modelling: Expertise in **Matlab/Simulink** for modeling and simulation, as well as **CATIA / 3DX** for the design of mechatronic systems

Languages: German (native), English (fluent, CEFR C1)

Projects

Formula Student Driverless — Ingolstadt
Schanzer Racing Electric e.V. — May 2024 – present

- Development and implementation of algorithms for autonomous driving in ROS2 and C++
- 3D mapping and localization of obstacles using SLAM algorithms
- Processing and fusion of LiDAR, camera, and IMU data
- Collaboration in interdisciplinary teams to optimize vehicle and software performance
- Execution of extensive testing, validation, and performance analyses in both simulation and on the real vehicle

Subteam Lead Formula Student Driverless — Ingolstadt
Schanzer Racing Electric e.V. — Mar 2021 – Sept 2024

- Leadership of the Driverless subteam, responsible for the autonomous system of a Formula Student racecar
- Management of development and integration of perception, planning, and control software
- Monitoring project plans, task distribution, and alignment with overall motorsport club objectives
- Collaboration with cross-functional teams (mechanics, electronics, software)

Deep Drone Challenge — Manching
Developer competition organized by brigkAIR and Airbus — Aug 2021

- Application of AI models for speech recognition
- Programming of an agent model for autonomous drone control in simulated airspace via air traffic management

Formula Student Driverless — Ingolstadt
Schanzer Racing Electric e.V. — Oct 2020 – Mar 2021

- Development of the software architecture of the autonomous system of a racecar in ROS
- Research and analysis of studies on autonomous racecars to identify innovative solution approaches
- Procurement and integration of sensors and actuators
- Establishing the foundation for the newly formed Driverless subteam