Mr. Dian YUAN

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PROFILE

Research Interest: Robotics, Software Engineering, Control System.
Language Skills: English: (fluent IELTS 7.0); German: intermediate (CEFR-B2); Chinese: native
Computer Software: ROS1&2, C/C++, Python, MATLAB/Simulink, CAD

EDUCATION EXPERIENCE

04/2021-12/2023 **Technical University of Munich,** Munich, Germany
- Master student in **Mechatronics and Robotics**.

09/2016-06/2020 **Zhejiang University**, Hangzhou, China
- Bachelor of Engineering with major in **Mechatronics Engineering**.

WORK/INTERNSHIP EXPERIENCE

06/2022-present **Fraunhofer Institute for Casting, Composite and Processing Technology,** Munich, Germany
Intern & Master Thesis Student, Software Engineer
- Interactive combat platform for a chess-playing robot: Android app and VR scenario in HoloLens 2.
- Robot inverse kinematics solution and path planning control.

11/2022-05/2022 **Fraunhofer – Institute of Cognitive System,** Munich, Germany
Working student, Software engineering for robotics
- Software development (C++, Python) for multi-robot collaboration scenarios with ROS2 and Webots.

08/2020-03/2021 **Wuxi Xuelang Industrial Intelligence Technology Co., Ltd.,** Hangzhou, China.
Business Architect, Department of Machine Intelligence
- Providing intelligent system solutions for factories.
- Software development with the industrial Internet platform *Xuelang OS* to develop intelligent controllers for specific industrial processes.

07/2019-09/2019 **Dresden University of Technology,** Dresden, Germany
Research Intern, Institute of Automation, supervised by Prof. Dr. techn. Klaus Janschek
- Working in the Group for Model-based Engineering for building a laboratory CPS-demonstrator "Safe Town" for autonomous driving in city area.
- Model-based software development using Simulink framework for Lego Mindstorm.

03/2019-06/2020 **State Key Laboratory of Fluid Power & Mechatronic System,** Hangzhou, China.
Research assistant (part-time)
- Participated in scientific research projects related to soft robots, mainly including pneumatic controller design, sensor selection and debugging.
- Participated in fluid research related scientific research projects, mainly including experimental platform design, data processing and computational fluid simulation.

ACADEMIC STUDIES & PROJECTS

11/2022–04/2022 Semester Thesis – ***Efficient Path Planning for Modular Robot***
- Implement path planning algorithms for modular robots with OMPL.
- Devise strategies to adapt previous planning results to new robot and evaluate effectiveness of reuse.

11/2022–02/2022 Course Project – ***Sound source localization and SLAM***
- Implement TDoA(Time Difference of Arrival) algorithm for sound source localization and navigate the TAS-car in unknown environment and create the map.

11/2022–02/2022 Course Project for Advanced Programming - ***Carbon Footprint Calculator***
- Software development using C++, CMake, GTest, calculate the carbon footprint of different behaviors.

08/2022-09/2022 ***CPS lab – Autonomous Driving Applications***
- Autonomous driving control and SLAM with *F1/10* racecar (Nvidia Jetson) based on LIDAR

06/2022-08/2022 Course Project - ***Autonomous Quadruped***
- Use perception to detect obstacles and plan path.
- Control quadruped robots to complete parkour tasks (Simulation with ROS & Unity).

12/2021-03/2022 Course Project - ***Using quadrotor UAV to complete specified tasks in specific scenario***.
- Fly over avalanche scenarios and locate victims by gradient descent and RSSI localization method.
- Using C++, ROS, Ubuntu, Docker, git etc.

04/2021-07/2021 Course Project - ***Optimization and Parallelization on Gaussian Elimination***.
- Parallelization of Gaussian elimination algorithms using OpenMP, MPI, SIMD methods and achieve a speedup of around 10 on a 16-thread server.