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PERSONAL STATEMENT

I studied Autonomous Systems at DTU and Chalmers, specializing in software development for race car dynamics and robot control. I possess strong analytical, practical, teamwork, and communication skills.


EDUCATION

Technical University of Denmark(DTU) <i>Master of Science in Engineering (MScEng), Autonomous Systems</i> GPA: 8.86/12; Core courses: Linear control design, Perception for AS	Copenhagen, Denmark 01.2021 – 12.2023
Chalmers University of Technology (exchange) <i>MSc in System, Control and Mechatronics</i> Core courses: Vehicle Motion Engineering, Decision-making for AS, Artificial Neural Networks	Gothenburg, Sweden 09.2022 – 12.2023
Nanjing Insitution of Technology <i>BSc in Mechatronics</i> GPA: 3.47, Rank in major: 10/162	Nanjing, Jiangsu 09.2016 – 06.2020

PROJECTS

Reinforcement learning for robust mobile robot navigation control   <i>Independent Developer</i>	DTU 07.2023 – 12.2023
<ul style="list-style-type: none">- Developed a training environment with Laser-scanner-equipped, two-wheel drive robot in Gymnasium.- Built the laser scanner module from scratch using Numba and vectorization for acceleration.- Designed adjustable paths, movable obstacles, and corridor walls in the environment to prevent overfitting.- Created a GUI tool for easy tweaking of training and environment parameters and for visualizing simulations.- Trained the NN ccontroller with PPO, achieving a 60% success rate in unknown environments with obstacles.	
Unmanned autonomous systems   <i>Project Developer</i>	DTU 06.2022 – 06.2022
<ul style="list-style-type: none">- Developed a control system in Simulink enabling hovering, translation, and set-point flight for a quadcopter.- Implemented path planning using A* in a 3D environment, successfully navigating a drone through a 3D maze.- Utilized polynomial optimization for trajectory planning, making the quadcopter navigate through hoops	

INTERNSHIP & WORK EXPERIENCE

Chalmers Formula Student  <i>Autonomous system software engineer</i>	Chalmers 09.2022 – 08.2023
<ul style="list-style-type: none">- Developed a method for converting GPS coordinates to map coordinates, used to verify SLAM map accuracy.- Developed a Gazebo plugin for a four-wheel drive vehicle motion simulation to test SLAM and control algorithms.- Contributed to developing a tool for launching autonomous systems with test options.- Assisted the team be the overall winner at 2023 FSG Driverless Cup and securing 7th place at FS East.	
Off-robot robot lab <i>MCU developer & head of the lab</i>	NJIT, Nanjing 07.2017 – 07.2018
<ul style="list-style-type: none">- Developed lane-following car on STM32, featuring camera/laser rangefinder tracking and robotic arm control.- Led the team to consecutive wins at provincial & national level robot competitions- Got two utility patents granted, and completed a Challenge Cup project in the topic of pipeline robots.	

AWARDS

First Award in Intellect Vehicle Challenge	06.2019
Champion in 2018 China Engineering Robot Competition	04.2018
First Award in 2018 China Robot Competition	08.2017

SKILLS

Coding: Python, C/C++, Matlab/Simulink, Linux, ROS, Docker, git
Control Systems Expertise: Linear control systems, control methods including PID and MPC, Reinforcement learning and neural networks, dynamics and control of drones, vehicles, and ROV
Language: IELTS 6.5 (Oral 7.0). Worked in international engineering team, demonstrating strong communication skills