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PERSONAL STATEMENT

I hold a Master's degree in Autonomous Systems from Technical University of Denmark, having worked on C++ vehicle dynamics simulations, Matlab drone modelling & control and Deep RL controller. My experience includes engineering in FSAE and various robotics competitions, demonstrating strong technical and teamwork skills.

EDUCATION

Technical University of Denmark(DTU)   **Copenhagen, Denmark**
*Master of Science in Engineering (MScEng), **Autonomous Systems***   *01.2021 – 12.2023*
GPA: 8.86/12; Courses: Linear control design, Perception for AS, Model-based system engineering

Chalmers University of Technology (exchange)   **Gothenburg, Sweden**
*MSc in **System, Control and Mechatronics***   *09.2022 – 12.2023*
Courses: Vehicle Motion Engineering, Modelling and Simulation, MPC

Nanjing Insitition of Technology   **Nanjing, Jiangsu**
*BSc in **Mechatronics***   *09.2016 – 06.2020*
GPA: 3.47, Rank in major: **10**/162

WORK EXPERIENCE

Plusgo   **Suzhou, Jiangsu**
Planning and Control Engineer   *12.2024 – 05.2025*
- Implement the data preprocessing part of prediction algorithm Simpl in C++, reducing processing time to under 10ms.
- Developed a backtracking collision detection feature by using GJK algorithm, accelerated 20%.
- Conducted vehicle dynamics calibration, as well as lidar-camera calibration; Wrote multiple documentation.
- Implemented a road query module based on KDTree, one small step for HD map path planning.
- Developed a Python-based pipeline to convert point cloud maps into the topological map, including DWG file parsing, coordinate transformation, and visualization.
- Participated in deployment and debugging of the PNC module.

INTERNSHIP & WORK EXPERIENCE

Hyperview - Apetech Autonomous Racing Car Project   **ZZIC**
*Intern, Innovation and R&D Department (**keywords:** Matlab, Vehicle Control, Speed Planner)*   *10.2024*
- Responsible for developing the simulation with heading and lateral controller.
- Developed a speed planner using track curvature calculated by Menger method.
- Implemented forward/backward adjustments to ensure the planned speed is consistent with the vehicle's acceleration and deceleration limits.
- Participated in tuning the vehicle control system, achieving a lap time of 2'40".

Chalmers Formula Student ↗   **Chalmers**
*Autonomous system engineer (**keywords:** C++, Gazebo, ROS, Vehicle dynamics modelling)*   *09.2022 – 08.2023*
- Developed car state estimator using a LuGre tire model, implementing a 15-state Kalman filter.
- Developed a C++ plugin for **4wd vehicle dynamics simulation** using **RK4**.
- Solved conflict issues when migrated legacy simulator to latest Gazebo.
- Contributed to developing the launching system for launching autonomous systems with test options.
- Assisted the team in **winnning** the 2023 FSG Driverless Cup and securing 7th place at FS East.

Off-robot robot lab   **NJIT, Nanjing**
*MCU developer & head of the lab (**keywords:** Embedded system, C, PID, Project Management)*   *07.2017 – 07.2018*
- 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.

PROJECTS

Reinforcement learning for robust mobile robot navigation control ◼ ◯ **DTU**
*Independent Developer (**keywords:** Kinematic modelling, Python, Reinforcement learning, PyQt)*   *07.2023 – 12.2023*

- Developed the kinematic model for a two-wheel drive robot and a laser scanner module in Gymnasium.
- Developed an algorithm to generate randomized paths, obstacles, and corridor walls for the training environment.
- Implemented reward functions for path tracking and obstacle avoidance. Testing and parameters tuning.
- Created a GUI tool for easy tweaking of training and environment parameters and for visualizing simulations.
- Trained the NN controller with PPO, achieving a 60% success rate in unknown environments with obstacles.

Unmanned autonomous systems ◼ ◯ **DTU**
*Project Developer (**keywords:** Matlab, quadcopter modelling, trajectory planning)*   *06.2022 – 06.2022*

- Created both nonlinear and linear models of the drone in Simulink for performance comparison.
- Developed position and altitude controllers in Simulink enabling set-point flight for 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 3D hoops.

AWARDS ⤴

2023 Formula Student Germany Driverless Cup overall winner	**08.2023**
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
Autonomous Systems Expertise: PID/LQR/MPC, Deep RL, modelling & control of drones, vehicles, and ROV
Language: IELTS 6.5 (Oral 7.0). Worked in international engineering team, demonstrating strong communication skills