Robotics Software Developer

JOSEF GSTOETTNER

ROS/ROS2 | C++ | Python | Gazebo

CONTACT

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- ⚲ https://github.com/JosefGst
- 🔊 https://josefgst.github.io/blog/
- in Linkedin

EDUCATION

- 2019 HKUST, Masters in Mechanical Engineering
- 2017 University of Applied Sciences Upper Austria, Undergraduate in Mechanical Engineering

SKILLS

Areas of specialization

- ROS / ROS 2
- Robot Simulations in Gazebo & Isaacsim
- Embedded software for ESP32, Arduino, STM32, NRF52
- CAD design in Fusion360 & Solidworks
- 3D printing, CNC machining and laser cutting

IT & programming

Python	████████████
C / C++	████████████
C#	██████
Matlab	████████
Docker	███████
Javascript	████
Html, Css	████

OS: 🪟 🐧

Languages

English	Full Professional
Mandarin	Limited Working
Cantonese	Elementary
German	Native

Learning & Hobbies

- PCB design with KiCAD
- Game development in Godot

C++ and Python developer with experience in ROS, navigation and SLAM. A well rounded mechatronics engineer with a strong understanding of mechanical engineering principles and programming languages to optimize system performance.

WORK HISTORY

System Engineer · 2022/4–2024/8
ROS ROBOT PROGRAMMING · LSCM | Sciences Park
- Made robots navigate autonomously, smoothly and avoid obstacles.
- Set up SLAM (Cartographer, SlamToolbox, ...) for 3D mapping of large areas.
- Simulated robots in Gazebo for testing and faster development.
- Create ROS nodes to interface with actuators and sensors via Serial or RS-485.
- Developed autonomous docking utilizing AprilTags for precise movement.
- Established communication with the server via MQTT for fleet management.
- Tuned PID controllers for smooth movement and speed control.
- Experience with a wide range of sensors (3D LIDAR, depth cameras, IMU, GPS).

Research Assistant · 2020/7–2022/3
EMBEDDED SOFTWARE · HKUST | Clear Water Bay
- Developed a weight scale with an RFID scanner for automated storage records in chemical labs on an Arduino MCU.
- CAD design for 3D printing and laser cutting of prototypes.
- Firmware development on a low-power IoT accelerometer with BLE Mesh for predictive maintenance based on Nrf52.
- Simulated a steel beam in Ansys for natural frequency analysis.

Mechanical Engineer · 2019/8–2020/4
CAD DESIGN · KALBAS | Cheung Sha Wan
- Designed, 3D-printed, and created tool paths for CNC machining of fish lure prototypes.

PROJECTS

Lingao ROS 2 · 2023/8
ROS 2 · Personal Project ⚲ https://github.com/JosefGst/lingao_ros2
- Built an autonomous mobile robot from scratch for outdoor environment.

Red Bird Racing · 2021/11–2022/4
AUTONOMOUS RACING · HKUST
- Cone detection with OpenCV and autonomous race car control-algorithm in ROS

Robomaster · 2021/10–2022/4
SOFTWARE TEAM · HKUST
- SLAM and navigation for autonomous Robots in ROS
- Embedded software development on STM32.

Autonomous RC-car race (first place 🏆) · 2020/12–2021/3
IMITATION LEARNING · HKUST ⚲ https://github.com/JosefGst/autorace
- Trained Pytorch model to be used on Jetson Nano for autonomous-driving, obstacle avoidance and overtaking of other cars.