Robotics Software Developer

JOSEF GSTOETTNER

ROS/ROS2 | C++ | Python | Gazebo

CONTACT

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Linkedin

SKILLS

Areas of specialization

- ROS / ROS 2 (Navigation, SLAM, Moveit)
- Robot Simulation in Gazebo & Isaacsim
- Theory of robot arm kinematics
- Embedded software (STM32, Arduino, Nrf52)
- 3D modelling 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 specialized in ROS, navigation and SLAM. Has a strong understanding of mechanical engineering principles, object-oriented programming and robot dynamics 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.
- Created object-oriented ROS nodes in C++ to interface with actuators and sensors.
- Developed autonomous docking utilizing AprilTags for precise movement.
- Tuned PID controllers for smooth movement and speed control.
- Worked on a wide range of sensors (3D LIDAR, depth cameras, IMU, GPS, Sonar).

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.

Education

Master of Science: Mechanical Engineering 2022/4–2024/8
· HKUST | Clear Water Bay
- Relevant Courses: Robotics | Dynamics of Machines | Finite Element Analysis

Bachelor of Science: Mechanical Engineering 2020/7–2022/3
· University of Applied Sciences Upper Austria | Austria

Projects

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.