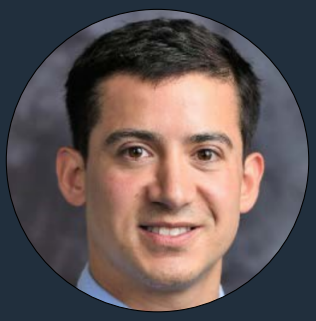

Robotics Software Developer

JOSEF GSTOETTNER

ROS/ROS2 | C++ | Python | Gazebo

CONTACT

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https://github.com/JosefGst
https://josefgst.github.io/blog/
Linkedin

SKILLS

Areas of specialization

- ROS / ROS 2 (Navigation, SLAM, Moveit)
- Robot Simulation in Gazebo & Isaacsim
- Behavior trees, robot task management
- Object-oriented programming
- PID control and robot kinematics
- Embedded software (STM32, Arduino)
- 3D modelling in Fusion360 & Solidworks
- 3D printing, CNC machining and laser cutting
- Single board computers (Raspberry Pi, Jetson)

Programming

Python
C / C++
C#
Matlab
Docker
JavaScript
HTML, CSS

OS:

Languages

English	Full Professional
Mandarin	Limited Working
German	Native

Learning & Hobbies

- PCB design with KiCAD
- Game development in Godot

C++ and Python developer specialized in ROS, navigation, SLAM and behavior trees for reliable autonomous mobile robots. Have a strong understanding of mechanical engineering principles, object-oriented programming and robot dynamics to optimize system performance.

Work History

Assistant Research Engineer 2025/9–present
ROS ROBOT PROGRAMMING · HKCRC | Sciences Park
- Develop autonomous, reliable tasks and recovery behaviors for a water tank cleaning robot using behavior trees.
- Set up navigation, SLAM & coverage planner to fully clean the whole surface.
- Utilize Docker to package the whole robot software plus development tools for hassle free development and deployment.
- Create realistic Gazebo simulations for faster iterations and testing.

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 2D/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.

Education

Master of Science: Mechanical Engineering 2018/9–2019/6
· HKUST | Clear Water Bay
- Relevant Courses: Robotics | Dynamics of Machines | Finite Element Analysis

Bachelor of Science: Mechanical Engineering 2014/9–2017/6
· University of Applied Sciences Upper Austria | Austria

Projects

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.