

GIANLUCA GALVAGNI

Robotics engineering

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PERSONAL STATEMENT

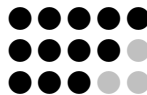
As a creative and meticulous Robotic and Industrial Engineer, I am motivated by the opportunity to incorporate advanced technologies into tangible and everyday uses.

I have a solid background in industrial engineering and continuous training in robotics. I am skilled in technical areas, with a propensity to proactively solving problems and a dedication to always learning, which helps me to handle new challenges and to be a valuable member of diverse teams.

I am excited to make use of my expertise and background in a lively setting that combines creativity with utility, and where my enthusiasm for robotics can drive significant progresses in various areas.

SKILLS

C, Python, ROS2, Linux, Matlab, Git
ROS, C++, PDDL, English
Tensorflow, Pytorch, Keras



EDUCATION / COURSES

Master's degree in robotics engineering

Università degli studi di Genova

September 2022 - October 2024

Immersive English Language Course

IELS Malta (Institute of English Language Studies)

May 2022 - August 2022

Bachelor's degree in industrial automation engineering

Università degli studi di Brescia

September 2018 - March 2022

Secondary School Diploma in Electrotechnical and Automation Technician

Giacomo Floriani Technical and Technological Institute

September 2013 - June 2018

HONORS & AWARDS

- RoboCup Jr Italia, IX national final (2017) - Rescue Line
- RoboCup Junior Accademy, national final 2018 - Rescue Line
- Certificate in "Use and Programming" by Comau, with a consolidated score of advanced (2018).
- IELTS English B2 certification (2022).
- Won the Hackathon UniWeLab on 30-31 March 2023, by Webuild and UniGe.

PROJECTS

RoboCup Robot - 2017 - 2018

- Project and implementation of a homemade robot starting from the CAD, then realization using the 3D printer and other techniques.
- Use of Arduino Mega and Arduino Nano in an I2C connection to allow the robot control.

Supervisors: Luigi Venditti, Walter Dalbon

High School Graduation Project - 2018

- Development, implementation and testing of an "Automatic Chicken Coop" that transported eggs via conveyor belts. Cleaning and drying of the eggsh throughout the transportation, before packing them in suitable boxes.
- Use of a PLC in conjunction with an Arduino to regulate the motor control through the PLC and the sensor feedback through the Arduino.

Supervisors: Luigi Venditti, Graziano Malfer

Thesis project: Motion of an Anthropomorphic KUKA Robot Arm - 2022

- Planning of the motion of the robot on a seventh auxiliary axis.
- Grip and placement of tools by the robot for a boring and milling machine.

Master's University Projects

- PDDL programs for Artificial Intelligence. Highlight: "coffee shop with robots as waiters and baristas".
- MATLAB programs for Machine Learning, Modeling and Control of Manipulators, and Biomedical for Robotics.
- C programs for Embedded Systems. Programming of a buggy for precise tasks.
- ROS and ROS2 systems. Programs for motion and control of robots in simulation environments.

All the Master's University Projects can be found on the individual GitHub page at the address github.com/giangalv.

Thesis project: Software Development for Mobile Robots - 2024

- Development of a system using SLAM techniques and a custom navigation controller.
- Testing of the solution in "TheEngineRoom" laboratory using the Unitree Go2 EDU robot.

THESIS

Progetto di un'Isola Robotizzata Tramite l'Utilizzo di ABB RobotStudio

The thesis project addresses a Pama client's requirement for an automated, multifunctional machining center featuring ample tool storage. A KUKA KR QUANTEC 210 R2700 robot acts as the slave to a SPEEDMAT HP7 machine (master), overseeing automatic tool changes and handling rack-mounted tools by loading and unloading them according to operator commands.

Supervisors: Riccardo Adamini, Silvano Pizzini.

Software Development for Mobile Robots in Construction Site Monitoring: A Case Study with the Unitree Go2 Robot

The thesis explores the potential of the Unitree Go2 mobile robot to improve safety and data gathering at construction sites. It encompasses a review of literature regarding sensor difficulties and SLAM methods. The research assesses different robotic systems and utilizes sophisticated algorithms, such as A* for navigation. Laboratory examinations validate efficient SLAM functioning, while indicating enhancements in rear-view detection. It suggests a software framework for customized robotic applications in construction management.

Supervisors: Fulvio Mastrogiovanni, Alessandro Carfi.