Simone **Giampà**

Computer Science Engineer

About me

As a Computer Science Engineer, I possess a profound passion for leveraging technology to solve complex problems and drive innovation. With a solid foundation in ML and Robotics principles and a diverse range of practical experiences, I bring a unique blend of technical expertise and creative problem-solving abilities.

Personal

Simone Giampà
21/08/1999
Nationality: Italian
Milan, Italy

Areas of specialization

Artificial Intelligence • Robotics • Deep Learning • Embedded Systems • Computer Vision

Interests

Aerospace • Space Exploration • Robotics • Artificial Intelligence

Contacts

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Linkedin Profile
Github Profile

Programming

C, C++ · Java · Python · Matlab · ROS, ROS2 · SQL · Tensorflow, TFLite, TFMicro

Hardware Platforms

Arduino Uno · Arduino Nano 33 BLE Sense · STM32F4 Nucleo · ESP32 Wifi

Robots & Sensors

AgileX Scout skid-steering robot · Igus Rebel robotic arm 6DoF · LIDAR · RGB-depth camera · IMU · Wheels encoders

Languages

mother tongue	C2	**Italian**
proficient	C1	**English**

Certifications

2018	IELTS Grade 7.5: Level C1
2017	B2 First Cambridge
2016	B1 PET Cambridge
2015	Trinity College Grade 6

Education

2021 - Present — **Master's Degree in Computer Science Engineering**
Politecnico di Milano · Milan, Italy
Currently attending - working on thesis project

2018 - 2021 — **Bachelor's Degree in Computer Science Engineering**
Politecnico di Milano · Milan, Italy
Grade: **101/110**

Master's Thesis Project - Ongoing Development

2024 — **Mobile Manipulation for inspection and exploration of industrial environments**
Polimi · Artificial Intelligence and Robotics Laboratory (**AIRLab**)
`Autonomous Systems` · `SLAM` · `Manipulator` · `Mobile Robotics` · `ROS2`
Development of an autonomous mobile manipulator control system aimed at performing several tasks in industrial environments, such as inspections, exploration, navigation and mapping. The mobile manipulator is composed of a mobile wheeled robot mounted with a 6-DoF manipulator on top. The whole system consists in a multitude of sensors, such as a LIDAR, stereo cameras, IMU, and actuators such as a pneumatic gripper. The manipulator carries object grasping and interaction tasks completely autonomously.

Some Projects at Polytechnic of Milan

2023 — **Robot head construction: Robotics and Design multi-disciplinary course**
`Workshop Laboratory` · `3D printing` · `Multidisciplinary project` Repository
Multidisciplinary project of Robotics and Design: building and programming of a 3d printed and programmable robot head capable of mimicking human emotions and expressiveness, while interacting with other robots of the other student groups.

2023 — **Neural Network for Spoken Language Recognition on an Embedded system**
`Tensorflow Lite & Micro` · `Neural Networks` · `Embedded Systems` Repository
Neural network recognizing the language a person is speaking, from mel spectrogram features. Developed on an Arduino Nano (TinyML kit) with TensorFlow Lite for Microcontrollers.

2023 — **Natural Language Text Processing with Transformer Models**
`Neural Networks` · `BERT Transformers` · `Natural Language` Repository
Text analysis, sentiment analysis and response generation with BERT Transformer models.

2023 — **Nonlinear ARMA time series classification with Online Machine Learning models**
`Streaming Machine Learning` · `Python` · `River library` Repository
Non-linear ARMA time series generation and classification with streaming (incremental learning) machine learning models in Python using the River ML library.

2022 — **Deep Learning: Convolutional Neural Networks and Transfer Learning**
`Tensorflow` · `Python` · `Image Classification` Repository
Image classification challenge with convolutional neural networks and transfer learning.

2022 — **Mobile Robotics projects with ROS and real-world LIDAR and encoders data**
`ROS` · `C++` · `SLAM` · `Mobile Robot` · `Autonomous navigation` Repository
Two projects in C++ using ROS aimed at analyzing and computing data coming from mecanum wheels encoders sensors and a LIDAR for autonomous simultaneous localization and mapping (SLAM), mounted on a mobile robot in the Robotics laboratory.

2022 — **STM32 Nucleo with Sensor Systems development board**
`Sensors` · `C` · `Microcontroller` · `Electronics` Repository
Development of many little projects aimed at handling a wide variety of sensors coupled with the STM32 Nucleo board, using FreeRTOS and several wire communication protocols.

2022 — **STM32 Nucleo with Miosix Embedded OS kernel-space programming**
`STM32` · `Embedded OS programming` · `C++` · `Linux` Repository
Development of John Conway's Game of Life cellular automaton on an STM32 running Miosix embedded OS in kernel-space and communicating via serial interface with an emulated terminal on a Linux machine.

2021 — **SW engineering project: an online multi-player board game**
`Java` · `Game` · `Large group project` · `Git` Repository
Large group project development in Java (with terminal and GUI interfaces) of a multi-player online board game: Maestri del Rinascimento. Very large code base.