Simone **Giampà**

Computer Science Engineering | Robotics & Deep Learning 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, 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

simonegiampa99@gmail.com
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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 · Soft Pneumatic Gripper

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
Robotics & Deep Learning specialization - currently attending

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

Master's Thesis Project

2024 — **Mobile Manipulation for inspection and exploration of industrial environments**
Polimi · Artificial Intelligence and Robotics Laboratory (**AIRLAB**)
`Autonomous Robotics Systems · SLAM · Hand Gripper · ROS2 · Nav2 · MoveIt2`
Development of an autonomous mobile manipulation system, composed of a mobile wheeled robot, and a 6-DoF robotic arm manipulator, with a soft pneumatic gripper acting as a robotic hand. The system is aimed at performing several tasks in industrial environments, such as inspections, exploration, navigation and interactions with objects. The whole system comprises of a multitude of sensors and actuators, including a LIDAR, stereo cameras, a microcontroller and a soft pneumatic gripper. The manipulator carries object grasping and interaction tasks completely autonomously with minimal human intervention and supervision. The project is part of a collaboration between the university and an important Italian company, which provides the funding for the research project that I'm able to work on.

University Projects

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 using ROS for data analysis of mecanum wheels encoders, IMU sensors and a LIDAR for autonomous simultaneous localization and mapping (SLAM)

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 the *Game of Life* cellular automaton on an STM32 running an embedded OS in kernel-space, using a serial interface with an emulated terminal on a Linux machine.

2021 — **Software Engineering project: an online multi-player board game**
`Java · Game · Large group project · Git` Repository
Large group project development in Java (with GUI) of a multi-player online board game.