Edoardo Ghini
Robotics Engineer

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CAREER MOTIVATION

Curious and **self-confident** person, level-headed and quite an experimenter. Passionate about programming and believing it to be a form of art. Fascinated by mysteries of **science** and firm believer in technological progress. Enthusiastic about the latest academic discoveries in my field of expertise. Looking forward to learning more about Neuroscience and Human Consciousness and combine them together with **Robotics** and **Artificial Intelligence**.

EDUCATION

2013 – 2016 **Bachelor of Science**
FINAL GRADE 95 /110
Computer Engineering
Roma Tre University

This course covered all the fundamentals of computer engineering introducing me to programming. The thesis covered what I learnt in the brief internship as a PHP back-end developer.
Thesis: *Unit testing avoiding regression in CI*

2016 – 2019 **MScEng**
FINAL GRADE 103 /110
Master in Artificial Intelligence and Robotics
La Sapienza, University of Rome

SUBJECTS

CALCULUS
PHYSICS
OPERATIVE SYSTEMS
DATABASES
NETWORK PROTOCOLS
ALGORITHMS
SOFTWARE ARCHITECTURE

WORK EXPERIENCE

CURRENT, FROM OCT 2020 (FT)

INRIA, French national research institute
Robotics Engineer

Developed a system from the ground up to **teleoperate** an industrial robot in hazardous environments. Each module of the pipeline is written in C++ and it is containerized with **Docker** and communicate through **ROS** middleware. Dynamics of the system is simulated in a **digital twin** using *dart* and *gazebo*. Joint-space and Cartesian control of the robot through *pinocchio* and *tsid* libraries. Designed a **GUI** for teleoperation with C++ library *ImGui* that introduces interactive **automation** of the task. Experience in URDF creation, modern C++ frameworks and libraries interfacing and acquaintance with robots of the lab: *franka* manipulator & *talos* humanoid robot.

FEB 2019 – OCT 2019 (FT)

La Sapienza, University of Rome
Master's Thesis

Implemented a robotic system to achieve autonomous navigation (**SLAM**) in an urban environment of a mobile robot equipped with a **3D-LIDAR** laser sensor. The whole project has been implemented in **C++** adopting the ROS build system. High-level features are extracted from the 3D-point cloud and categorized in geometric primitives. The sensor data is processed using the primitives in order to compute the trajectory of the robot. Usesd a probabilistic approach that involves using the **Gaussian assumption** and a **Least Square** formulation. The work has been developed in collaboration with the Robotics Laboratory of La Sapienza University.
Master thesis link

MAR 2016 – JUL 2016 (FT)

Translated
Back-end developer

During this internship, I was responsible for the codebase of a web application: **Matecat**, written in PHP. I developed unit-tests to certify the correctness of the core of the application. Brought code coverage percentage from 0% to 25%. Worked with databases and client-server communications: **MySQL** and **Apache**. Learned how to work in **agile** teams, following **scrum** principles. Acquired deep knowledge of advanced testing techniques: **mock objects**, **reflection**, and **TDD**.
Bachelor thesis link

EDUCATION

PROGRAMMING SKILLS

LANGUAGES	C++, python, LaTeX, Java, bash, MATLA
C++20	variadic templates, r smartpointers, conc
DESIGN	OOP, polymorphisr
TESTING	TDD, reflection, m
LIBRARIES	OpenCV, tensoflow
DEVOPS	cmake, Docker, git,

THEORETICAL SKILLS

ROBOTICS CONTROL	dynamic systems inverse dynamics,
ROBOTIC NAVIGATION	SLAM, trajectory obstacle avoidanc
MACHINE LEARNING	bioinspired netwo spiking neurons,
ARTIFICIAL INTELLIGENCE	multiagent systen first order logic, p
COMPUTER SCIENCE	operative systems, algorithms design

REFERENCES

Dr. Serena Ivaldi
POSITION Research scientist
EMPLOYER INRIA
EMAIL serena.ivaldi@inria.fr

Dr. Giorgio Grisett
POSITION Professor
EMPLOYER La Sapienza, Universi
EMAIL grisetti@diag.unirom

Languages: **Italian:** native **English:** IELTS academic cert. Overall band score **7.0** CEFR level **C1** **French:** level **A2**