

EDUCATION

Università di Genova (103/110) ↗ MSc Robotics Engineering (EMARO & Erasmus+ Student)	Genoa, Italy Sep 2021 - Oct 2023
AASTMT (3.2/4.0) ↗ BSc Mechatronics Engineering	Sep 2016 - Sep 2021

WORK EXPERIENCE

LIRMM ↗ <i>Robotics Engineer</i> Reference: CNRS Senior Researcher Marc Gouttefarde ✉	Montpellier, France Mar 2023 - Aug 2023
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- Discovered and corrected a mechanical failure in timing belt. (126% lift capability)
- Transitioned from simulation to vehicle software, integrating C# and C++ via DLL.
- Utilized Eigen and qpOASES for C++ Quadratic Programming. (solutions in < 1 ms)
- Designed and fabricated the vehicle's power distribution PCB.
- Modeled world's first Hybrid Cable Thruster-Actuated Remotely Operated Underwater Vehicle.

BMW ↗ <i>Maintenance Engineer</i>	Jun 2019 - Jul 2019
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- Managed work orders, coordinated spare parts from warehouse.

CONFERENCES & COMPETITIONS

6th International Conference on Cable-Driven Parallel Robots ↗	HCT-ROV Poster Sharing ↗
5th International Undergraduate Research Conference ↗	Best Paper Award ↗
MATE ROV competition ↗	3 rd /25, Best Pres., Innov. Solution Awards ↗
Underwater Robotics Challenges ↗	Best cost analysis Awards ↗
IEEE "Zewail city": Walking robots	Best documentation & Best design awards ↗
First Lego League: Climate connections & Smart Move ↗	4 th /50 & Best Presentation ↗

RELATED PROJECTS

Surveillance Robot with Logic & Finite State Machine ↗	R300 AUV & Frank Panda Task Priority Controller ↗
<ul style="list-style-type: none"> • Employed ROS, OpenCV, ARUCOROS, Smach; created marker-based ontology map and navigation. 	<ul style="list-style-type: none"> • AUV simulation and task control using MATLAB; cooperation of Franka Emika Panda robots.
Low Level Controller/driver for Mobile Robot ↗	SLAM-Based Interactive Robot Navigator ↗
<ul style="list-style-type: none"> • Utilized DSPIC30F4011, Timers, Scheduling, ADC, PWM, UART, SPI for LCD. 	<ul style="list-style-type: none"> • Autonomous robot using ROS-Noetic, gmapping, and move_base. Enhanced with a Jupyter interface.
ROS2-Based TIAGO Robot Navigation ↗	Autonomous Drone Fleet Coordination ↗
<ul style="list-style-type: none"> • Utilized Galactic, SLAM, localization-only mode, continuous mapping in simulation. 	<ul style="list-style-type: none"> • Employed UDP, IPC, named/unnamed pipes, sockets, shared memory, signal-based IPC, watchdog timer.
ROS-based Autonomous Wall-Avoidance Robot ↗	Line follower and obstacle avoiding robot ↗
<ul style="list-style-type: none"> • Implemented in C++, with sensor feedback and user speed controls. 	<ul style="list-style-type: none"> • Arduino-powered design with sensors for autonomous navigation; manual controls for movement and alerts.

TECHNICAL SKILLS

Programming Languages:	C, C++, Python, MATLAB
Computer Aided Design:	AutoCAD, Inventor, Creo
Micro-controllers/computers Boards:	Arduino, Tiva-C, Pixhawk, DSPICDEM2, Raspberry Pi
Robotics:	Modeling, Control theory, ROS, ROS2, OpenCV, Gmapping

LANGUAGES

English Full Professional Proficiency	Arabic Native Proficiency	Italian Elementary Proficiency	French Elementary Proficiency
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