Mario Sedilesu

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Profile

Robotics engineer with hands-on experience contributing to cross-functional teams on EMG-controlled exoskeleton projects.

Education

University of Verona, PhD in Intelligent Systems Engineering — Oct 2025 – Present

- Doctoral research in Intelligent Systems Engineering.

University of Verona, BSc in Computer Engineering for Robotics and Smart Industry (Class LM-32) — Oct 2022 – Jul 2025

- Graduated with **110/110 cum laude** and Full Professional English proficiency.
- Relevant topics: Robotics, Embedded Systems, Robot Programming and Controls, Smart Industry Architectures.

Università degli Studi di Sassari, BSc in Computer Engineering (Class L-08) — Oct 2019 – Oct 2022

- Graduated with **107/110**
- Relevant topics: Control Systems, Machine Learning, Programming

Research Experience

Research Fellow, Università degli Studi di Verona — DIMI — Verona, Italy — Aug 2025 – Sep 2025

- Awarded research grant within the SHIELD project (RIR 2024 — Regione Veneto).
- Developed software/firmware modules for wearable robotic exoskeletons with real-time constraints and EMG decoding.

Research Collaborator, Università degli Studi di Verona — Altair Lab — Verona, Italy — Apr 2025 – Sep 2025

- EMG-based exoskeleton control systems (Human-in-the-loop optimization).
- Development of adaptive assistive robotics pipelines.

Research Fellow, Università degli Studi di Verona — DIMI — Verona, Italy — Jun 2025 - Jun 2025

- Awarded competitive research grant under the PR Veneto FSE+ 2021–2027 program for the project "ASSOLOIST: Myoelectric-Controlled Exoskeleton for Motor Disability Assistance".
- Produced communication deliverable videos and a bilingual public abstract (IT/EN) to enhance outreach and dissemination.
- Participated in public workshops showcasing exoskeleton systems and EMG-based control strategies to academic and non-academic audiences.

Research Intern, Università degli Studi di Verona — Verona, Italy — Dec 2024 – Jan 2025

- Studied NMS models for upper-limb exoskeletons and sEMG-based control.
- Achieved real-time performance 100 Hz in calibration and control loops.

Research Intern, Università degli Studi di Sassari — Sardinia, Italy — Jan 2022 – Oct 2022

- Developed ML model to predict nuclear reaction cross-sections (n,p) and (n,α).
- Validated theoretical frameworks via regression analysis.

Teaching Experience

Teaching Tutor — Robotics, Università degli Studi di Verona — Oct 2025 – Present
MSc in Computer Engineering for Intelligent Systems

- Provided tutoring, guided exercises, and student support for the Robotics course.

Entrepreneurial Experience

Team Member, Drivehia — 2nd place & "Green & Blue" honorable mention at StartCup Sardegna; PNI 2024 participant 2023-2024

- Co-developed Drivehia, a route-optimization model for road transport aimed at minimizing wasted capacity, fuel consumption, and environmental impact.
- Achieved 2nd place and the "Green & Blue" honorable mention (best climate-friendly idea) at StartCup Sardegna; invited to participate in PNI 2024.
- Managed the team's booth during the two-day national event at PNI 2024, engaging with investors, academics, and startup professionals.
- Led prototype development, managed project timelines, and coordinated a cross-functional team.
- Established partnerships with industry stakeholders.
- Crafted and delivered persuasive pitch presentations to investors and sector experts, refining storytelling and technical communication skills.

Technical Skills

- **Embedded & Hardware:** STM32, ESP32, Arduino, Xilinx, Raspberry, ESCON
- **Languages & Frameworks:** C/C++, Python, MATLAB/Simulink, Java
- **Machine Learning:** Regression, Classification, NN, SVM, Random Forest, Gradient Boosting, KNN, TensorFlow/Keras, Scikit-learn
- **Robotics & Vision:** ROS1/2, Feedback control, Compliance Control, Kinematics/Dynamics, Neuromusculoskeletal (NMS) models, Gazebo, OpenCV, 3D reconstruction
- **Tools & DevOps:** Git, Docker, VS Code, PlatformIO, Unix Shell, Qt, Opensim, CEINMS
- **OS & Others:** Linux, Windows, LaTeX

Languages

- English (Full Professional proficiency)
- Italian (Native)