



GIULIO BERARDI

Engineering Student

PROFILE

Master's student in Mechatronics Engineering with hands-on experience in experimental methodologies and laboratory research.

Currently exploring soft robotics through my thesis work, with a strong interest in bridging research and practical engineering solutions.

CONTACTS

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📍 Bari, Italy

LANGUAGES

- Italian: Native
- English: B2 (Cambridge Certificate)
- German: A2 (Goethe-Zertifikat)

TECHNICAL SKILLS

Design & Manufacturing

- Mechanical Design
- Reverse Engineering
- Additive Manufacturing

Modeling & Simulation

- FEM (Finite Element Method)
- Direct & Inverse Kinematics

Measurement & Data

- Experimental Setup Design
- Experimental Methodology
- Data Acquisition Systems
- Data Analysis & Modeling

Mechatronics & Robotics

- Soft Robotics
- Fluidic Systems
- Sensor Selection
- Feedback Control

SOFTWARE & TOOLS

- MATLAB
- AutoCAD
- Arduino
- ABAQUS
- Microsoft Office (PowerPoint, Excel, Word)

PROFESSIONAL EXPERIENCE

GRADUATE RESEARCH ASSISTANT

11/2024 - ongoing

- Gained first exposure to academic research, being introduced to experimental methodology and laboratory equipment, with the opportunity to approach the field of soft robotics.
- Currently focusing on my Master's thesis.

EDUCATION

Master Degree in Mechatronics Engineering

09/2024-ongoing

Politecnico di Bari, Bari, Italy

Bachelor Degree in Mechanical Engineering

22/07/2024

110/110 cum laude

Politecnico di Bari, Bari, Italy

RELEVANT PROJECTS

Fabrication and Characterization of Thin McKibben Artificial Muscles

Fabricated thin soft pneumatic actuators (McKibben-type artificial muscles) and built an experimental setup to characterize their force and displacement output under varying load and pressure.

Independent Actuation of Rehabilitation Glove Fingers

Modified a commercial rehabilitation glove — originally limited to simultaneous flexion/extension of all fingers — by integrating solenoid valves to enable independent actuation of each finger.

Data-Driven System Identification and Control of a Bi-Copter

Designed and built a low-cost bi-copter test platform for a university project on data-driven identification and control. Developed the embedded firmware, acquired experimental data via a custom MATLAB interface, and identified and compared linear and nonlinear dynamic models (ARX, Box-Jenkins, Hammerstein-Wiener, NARX). Designed and tuned a PID controller, validated through real-time hardware-in-the-loop testing.