Eugenio Monari

Date of birth: 24/09/1996 | **Nationality:** Italian | **Phone number:** (+39) 3885639110 (Mobile) | **Email address:**

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WORK EXPERIENCE

02/2024 – CURRENT
RESEARCH FELLOW UNIVERSITY OF BOLOGNA

Project: Development of safe hand guided robots
Supervisor: Prof. Rocco Vertechy

EDUCATION AND TRAINING

11/2020 – 01/2024
PHD IN MECHANICS AND ADVANCED ENGINEERING SCIENCES University of Bologna

Supervisor: Prof. Rocco Vertechy

Thesis Human interaction control with redundant robots

09/2023 – 12/2023
VISITING SCHOLAR University of Linz

Inverse kinematics of redundant robots
Supervisor: Prof. Andreas Müller

2018 – 2020
MASTER'S DEGREE IN AUTOMATION ENGINEERING University of Bologna

Final grade 110/110 | **Thesis** Force control of a collaborative robot for manual guidance applications

2015 – 2018
BACHELOR'S DEGREE IN AUTOMATION ENGINEERING University of Bologna

LANGUAGE SKILLS

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C2	C2	C2	C2	C2
FRENCH	C1	C1	C1	C1	C1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

Proficiency in C, C++ and Python | Proficiency in Matlab/Simulink | Knowledge of Creo | Knowledge of Linux

- ## ADDITIONAL INFORMATION

PUBLICATIONS

On Locally Optimal Redundancy Resolution using the Basis of the Null Space – 2023

Proceedings - IEEE International Conference on Robotics and Automation

A COBOT-IMU Hand-Guiding System with Online Collision Avoidance in Null Space – 2022

ROMANSY 2022: ROMANSY 24 - Robot Design, Dynamics and Control

Multidirectional hemispherical dielectric elastomer proximity sensor for collision avoidance in human-robot interaction applications
– 2022

Proceedings of SPIE - The International Society for Optical Engineering

A New Resonance-Based Design Approach to Reduce Motor Torque Requirements in Automated Machinery
– 2022

International Journal of Advanced Manufacturing Technology

PROJECTS

05/2023 – CURRENT
ISACOB - BRIC 2022 Study of the safe and auto-adaptive interaction between a human operator and a collaborative robot

01/2023 – CURRENT
Collaboration with OCME Kinematic and dynamic analysis and design of a five-link closed-chain robot

05/2022 – 05/2023
Collaboration with Robosuits SRL Design of the controller of a light exoskeleton

11/2020 – 09/2022
SaRAH - COVR European Project Monitoring of the ergonomic fatigue of a worker in a collaborative hand-guided drilling application

11/2020 – 05/2022
SIC-O-MAN - Collaboration with INAIL Safety study of a collaborative hand-guided drilling application, with a comparative analysis of international standards

TUTORSHIPS AND EDUCATIONAL ACTIVITIES

2020 – 2023
Tutor of the course of Project Work - Bachelor's Degree in Mechatronic Engineering

2022 – CURRENT
Tutor of the course of Mechanics of Machines for Automation - Master's Degree in Automation Engineering

Co-supervisor in Master's Degree Theses

- Massimo Venturi, Friction compensation and null space control of a redundant robot, Master's Degree in Automation Engineering
- Marco Iacobucci, Dynamic parameters identification of a collaborative robot, Master's Degree in Mechanical Engineering
- Alessandro Bianchini, Position control for pick & place tasks of a Delta robot, Master's Degree in Mechanical Engineering
- Eugenio Baldolini, Design of the control law for pick & place tasks of a Delta robot, Master's Degree in Automation Engineering
- Mattia Brugnettini, Design of an innovative control algorithm for the computation of the null space command in redundant robots, Master's Degree in Automation Engineering

Supervision of internship activities at the SAIMA laboratory of the University of Bologna

- Marco Bugo, Study of singularity configurations of the Franka Emika Panda robot, Master's Degree in Automation Engineering
- Francesco Vender, Reading of data coming from printed-electrode capacitive sensors and implementation of an IoT protocol for data transmission to a Beckhoff automation system, Master's Degree in Electronic Engineering

PATENTS

Electroadhesive web handling system - 2023

System for automatic machines that handles tools through electroadhesive patches, developed in collaboration with Tetrapak