



# Mara Coduri

**Nationality:**   **Date of birth:** 8 Mar 1995

 **Phone number:**    **Email address:**    **Home:**

## WORK EXPERIENCE

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### PhD Student

**University of Genoa, Italy** [ 1 Jan 2022 – Current ]

Curriculum: Bioengineering and Robotics at Department of Informatics, Bioengineering, Robotics and Systems Engineering.

Collaboration with Joint lab for Emerging Technologies in Simulation (JETS) at the Simulation and Advanced Education Center (SimAv)

Study area: medical simulation, surgical simulation, newborn life support simulation

### Research Fellow

**University of Genoa, Italy** [ 1 Oct 2021 – 31 Dec 2021 ]

Development of methodologies for the design and construction for research purposes and with different techniques, including innovative ones, of sensors, components, and mechanical electronic devices with high reliability and reproducibility embedded.

### Research Scholarship

**University of Genoa, Italy** [ 1 Jun 2021 – 30 Sep 2021 ]

Following the achievement of the degree, I was able to continue the development of the project started with the thesis work, researching the theme: "Wearable systems for telerehabilitation".

### Internship

**University of Genoa, Italy** [ 27 Jun 2018 – 28 Nov 2018 ]

Hardware and software design and implementation of a prototype solution to generate visual stimuli through the use of 6 OLED displays and a micro-controller connected to an inertial sensor.

## EDUCATION AND TRAINING

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### Master's Degree in Bioengineering

**University of Genoa** [ Sep 2018 – Mar 2021 ]

Country: Italy

Thesis: Software platform development integrating smartwatch and wearable devices for neuromotor rehabilitation

### Bachelor's Degree in Biomedical Engineering

**University of Genoa** [ Sep 2014 – Mar 2018 ]

Country: Italy

Thesis: Control of a mini-display as the interface to generate low-level visual stimuli

### Training course DISCIPLINARY AREA A (24 CFU D.M. 616/2017)

**University of Genoa** [ Feb 2020 – Jun 2020 ]

Country: Italy

**Diploma from scientific high school**  
*Scientific High Enrico Fermi* [ 2008 – 2014 ]

Country: Italy

**PUBLICATIONS**

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**Combination of VR and manikins to improve medical training**

Coduri et al, 2023, VIII Congress of the National Group of Bioengineering

**Validation of ELVIS, a virtual simulator for laparoscopic training**

Coduri et al, 2023, 20th International Multidisciplinary Modeling & Simulation Multiconference

**CONFERENCES AND SEMINARS**

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**SESAM23 Society For Simulation In Europe**

[ Lisbon, Portugal, Jun 2023 ]

Workshop presented "*New technologies for medical training: a tech guide for healthcare professionals*" with Serena Ricci, Willem VAN MEURS, Andrea Calandrino

**SESAM23 Society For Simulation In Europe**

[ Lisbon, Portugal, Jun 2023 ]

Short communication "*Short Stress State and Sense of Presence in a prototype of Mixed-Reality Simulator for first aid and trauma management training*"

**IMSH23 Society for Simulation in Healthcare - Workshop**

[ Orlando, Florida, Jan 2023 ]

Workshop presented "*Virtual and Augmented Reality for simulation: a tech guide for healthcare professionals*" with Prof. Serena Ricci

**IMSH23 Society for Simulation in Healthcare - Oral Presentation**

[ Orlando, Florida, Jan 2023 ]

Oral presentation, "*MR STEVE: Mixed Reality Simulator of Traumatic EVEnts*"

**IMSH23 Society for Simulation in Healthcare - Poster Presentation**

[ Orlando, Florida, Jan 2023 ]

Poster presented, "*Mixed-reality simulator for newborn life support training*"

**IEEE International Conference on E-health Networking, Application & Services**

[ Genoa, Italy, Oct 2022 ]

Poster presented, "*Multidisciplinary training through healthcare simulation: a case study*"

**8th International Summer School of Neuroengineering**

[ Genoa, Italy, Jul 2022 ]

Poster presented, "*An open source visuo-haptic simulator for surgical education*"

**Congresso Nazionale SIMMED 22 - Video Abstract**

[ Padova, Italy, May 2022 ]

Video Abstract presented "MR STEVE: simulatore di realtà mista per la gestione del trauma", for this presentation I won the prize for the best Video Abstract

Link: <https://simmed.it/index.php/mr-steve/>

## **Congresso Nazionale SIMMED 22 - Workshop**

[ Padova, Italy, May 2022 ]

Workshop presented "L'utilizzo di Realtà Virtuale e Realtà Aumentata per la realizzazione di scenari ad alta fedeltà" with Dr. Serena Ricci and Dr. Andrea Calandrino.

## **TEACHING ACTIVITY**

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### **Teaching assistant at University of Genova, Italy**

[ Feb 2023 – Jun 2023 ]

Class: Biomedical Instrumentation Laboratory, Bachelor's Degree in Biomedical Engineering

### **Teaching assistant at University of Genova, Italy**

[ Feb 2022 – Jun 2022 ]

Class: Biomedical Instrumentation Laboratory, Bachelor's Degree in Biomedical Engineering

## **PROJECTS**

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### **Newborn life support training simulator**

[ Jan 2022 – Current ]

PhD project.

I am developing a mixed-reality newborn life support simulator that can be used to spread high-quality newborn resuscitation training among healthcare providers involved in perinatal medicine.

### **Surgical Simulator**

[ Jan 2022 – Current ]

PhD project.

I am developing a visuo-haptic simulator for surgical training combining an open-source software (SOFA Framework) and an affordable haptic device (Geomagic Touch).

### **Software platform development integrating smartwatch and wearable devices for neuromotor rehabilitation**

[ May 2020 – Mar 2021 ]

Master thesis project.

For my master thesis project I created a platform able to provide tele-rehabilitation services. Specifically, during the project I was able to:

- Design and implement a prototype of a wearable device adopting inertial sensors
- Develop an application for Wear OS smartwatch used as a node of data exchange and pre-processing of the data
- Use a non-relational database for data historicization (MongoDB)
- Develop a Webservice for the acquisition of data historicized on DB
- Develop a front-end dedicated to the therapist

### **Hardware and software design and implementation of a prototype solution to generate visual stimuli through the use of 6 OLED displays and a micro-controller connected to an inertial sensor.**

[ Jun 2018 – Nov 2018 ]

Internship project.

During this project I had the opportunity to investigate the hardware and software aspects necessary for the design and implementation of prototype solutions in order to generate low-level visual stimuli.

### **Control of a mini-display as the interface to generate low-level visual stimulus**

[ Sep 2017 – Feb 2018 ]

Bachelor thesis project.

I realized a prototype in order to generate low-level visual stimuli. In particular, the stimuli were generated by the Arduino Uno development board to be shown on an OLED display.

## **DIGITAL SKILLS**

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### **Development**

Android Developer / Java / C# / C / C ++ / MATLAB / Arduino IDE / Unity 3D / Python

### **CAD**

OrCad Schematic Layout / KiCad / Autodesk Fusion 360 / Autodesk Eagle

## **LANGUAGE SKILLS**

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Mother tongue(s): **Italian**

### **Other language(s):**

#### **English**

**LISTENING B2 READING B2 WRITING B2**

**SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2**

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