



## Maura Casadio

Associate professor

✉ maura.casadio@unige.it

☎ +39 0103532749

☎ +39 0103536550

### *Education and training*

2007

#### **Master's Degree in Bioengineering University of Genoa Italy**

Rehabilitation robotics - for stroke survivors minimally assistive and adaptive protocols for visuo-haptic tracking and bimanual coordination  
Università di Genova - Genova - IT

2006

#### **PhD Degree in Robotics Materials Science and Bioengineering**

Neural Control of movement from the mechanical impedance to robot therapy  
Università di Genova - Genova - IT

2002

#### **Masters Degree in Electronic Engineering University of Pisa. Italy.**

Study and set-up of a (ultrasound- infrared) system for ergometric evaluation of gait  
Università di Pisa - Pisa - IT

### *Academic experience*

2015 - ONGOING

#### **Associate professor**

Università di Genova - Genova - IT

2012 - 2014

#### **Assistant professor**

Università di Genova - Genova - IT

2008 - 2011

#### **Post-doctoral fellow**

Northwestern University Feinberg School of Medicine - Chicago - US

### *Work experience*

2006 - 2007

**Biomedical Engineer-Researcher (motion analysis lab).**

Don Carlo Gnocchi Foundation - Sarzana La Spezia - IT

***Language skills***

**Italian**

Mother tongue

**English**

Proficient

**French**

Basic

***Teaching activity***

**2018/2019**

Biomedical Robotics (6 CF), Master's Program in Bioengineering, School of Engineering, University of Genoa

Biomedical Robotics (6 CF), Master's Program in Robotics Engineering & Emaro, School of Engineering, University of Genoa

Rehabilitation Engineering (6 CF), Master's Program in Bioengineering, School of Engineering, University of Genoa

**2016/2017 & 2017/2018**

Biomedical Robotics (6 CF), Master's Program in Bioengineering, School of Engineering, University of Genoa

Rehabilitation Engineering (6 CF), Master's Program in Bioengineering, School of Engineering, University of Genoa

Biomeccanics and bioengineering (2 CF), Master's Program in Kinesiology, School of Medicine University of Genoa,

Biomeccanics (4 CF), Bachelor's Program in Kinesiology, School of Medicine University of Genoa, (1/2 course)

**2015/2016** Biomedical Robotics (6 CF), Master's Program in Bioengineering, School of Engineering, University of Genoa

Rehabilitation Engineering (6 CF), Master's Program in Bioengineering, School of Engineering, University of Genoa

Biomeccanics and bioengineering (2CF), Master's Program in Kinesiology, School of Medicine University of Genoa

Biomeccanics (4CF), Bachelor's Program in Kinesiology, School of Medicine University of Genoa, (1/2 course)

**2014/2015** Biomedical Robotics and Rehabilitation Engineering (6 CF), Master's Program in Bioengineering, School of Engineering, University of Genoa

Biomeccanics (4CF), Bachelor's Program in Kinesiology, School of Medicine University of Genoa, (1/2 course)

**2013/2014** Biomedical Robotics and Rehabilitation Engineering (6 CF), Master's Program in Bioengineering, School of Engineering, University of Genoa

**2013/2014** Neurorehabilitation and Biorobotics Laboratory (5CFU), Master's Program in Bioengineering, School of Engineering, University of Genoa

**2013/2014** Movement Biomechanics and Rehabilitation Engineering (12 CF), Master's Program in Bioengineering, School of Engineering, University of Genoa, of unit on 'Rehabilitation Engineering' (6 CF)

**2012/2013** Anthropomorphic Robotics. (5CF).

**2012/2013** Control and models of biological systems (5 CF),  
Undergraduate curriculum of Biomedical Engineering. School of Engineering  
University of Genoa. Instructor of module on Controls.

**2011/2012** Control and models of biological systems (5 CF),  
Undergraduate curriculum of Biomedical Engineering. School of Engineering  
University of Genoa. Instructor of module on Controls.

## ***Postgraduate research and teaching activity***

### **Supervision of PhD students, residents and post-doctoral fellows**

#### **PhD students advisor:**

2017-present Fabio Rizzoglio (co-advisor FA Mussalvaldi) -Unige

2017-present Elisa Galofaro -Unige

2016-present Serena Ricci (co-advisors G. Arnulfo, MF Girardi) -Unige

2015-present Iandolo Riccardo (co-advisor M. Inglese) -Unige

2014-2017 Laura Pellegrino (co-advisor M. Coscia)-Unige

2013-2016 Alice De Luca -Unige

2013-2016 Camilla Pierella (co-advisor FA Mussalvaldi) -Unige

Participant PhD advisor commette:

2017-present Valay Shah - Marquette Univestity

Supervision of the foreign PhD students:

- Valay Shah visiting PhD student from Marquette Univestity (september  
2017-august 2018)

- Julie Wagner visiting PhD student Marquette Univestity (september 2017-  
august 2018)

#### **Research fellow advisor(assegnista di ricerca)**

2017 Laura Pellegrino (post-doc)

2014 Riccardo Iandolo (pre-doc)

### **PhD committees membership**

2013- present

Partecipazione Collegio Docenti del Dottorato 'BIOINGEGNERIA E ROBOTICA -  
BIOENGINEERING AND ROBOTICS'

2012 -2015

Partecipazione al Collegio Docenti del Dottorato 'BIOINGEGNERIA'

## ***Research interests***

Research interests:

- Body-machine interfaces
- Neural control of movement
- Neuromotor rehabilitation
- Robotics
- Sensory enhancement and substitution

## *Grants*

2018 - ONGOING

### **Artificial Somatosensation for Humans and Humanoids Lab - Virtual lab Italy-Israel**

MINISTRY OF SCIENCE AND TECHNOLOGY OF THE STATE OF ISRAEL - IL

Principal investigator

The Artificial Somatosensation for Humans and Humanoids Lab will advance groundbreaking research towards a future in which humans and robots will benefit from synergetic integration between natural and synthetic somatosensation for perception and control. These systems will be not only bioinspired, but also will go beyond human capabilities, such as tactile super-acuity, chemical sensing, and others. The lab will focus on advancing the understanding of distributed human sensorimotor loops and on using this understanding to develop devices, representation models, and control algorithms for implementing human-like sensorimotor loops in robotic rehabilitation and assistance, bionic devices, and humanoid robots. The Italian and Israeli partners and their students will collaborate to make the necessary technological and scientific leaps in sensing, representation, and control. They will educate the next generation of scientists and engineers in the development of bioinspired and bio-augmenting technologies and software for providing humans and humanoid robots with effective somatosensory feedback.

The research in the lab is expected to advance neuroscience, engineering, robotics and medicine, and will result in new scientific theories that will be eventually transferred to the industry and the clinic. The investigation of human somatosensation will generate new knowledge and models that describe natural somatosensation. The bioinspired sensorimotor loops will result in a new generation of humanoid robots and bionic devices that are capable of much greater degree of motor autonomy than exists today. In addition, new devices for sensing of tactile information and for conveying somatosensory information to human users will be developed. These new systems and devices will be transferred to the industry and promote the competitiveness of Israeli and Italian industry in the European and global markets. The scientific theories and devices will also be integrated in the clinical treatment of stroke survivors and will improve rehabilitation of neurological disorders and the quality of neuroprostheses for the benefit of worldwide and specifically Italian and Israeli population.

## *Editorial activity*

### **Reviewing activity**

**Research organizations:** National Science Foundation (NSF),USA

**International journals:** Clinical rehabilitation, Clinical Biomechanics, IEEE Transaction on Biomedical Engineering, IEEE transaction on Haptics, IEEE Transactions on Neural Systems and Rehabilitation Engineering, Computational Intelligence and Neuroscience, Journal of Neurophysiology, Plos Computational Biology, Journal of NeuroEngineering and Rehabilitation, Experimental Brain Research, IEEE Robotics and Automation

Letters

### Conferences

- **Editor** - member of the Executive Program Committee of the 7th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics(**BioRob 2018**).
- **Associate Editor** of IEEE International Conference on Rehabilitation Robotics (**ICORR**), London, UK, 17-20 July
- **Scientific committee** member IEEE International Conference on Rehabilitation Robotics (ICORR), Singapore, Singapore
- **Associate Editor** IEEE International Conference on Rehabilitation Robotics (**ICORR**), Singapore, Singapore
- **Associate Editor** - The IEEE International Conference on Biomedical Robotics and Biomechatronics – **Biorob 2014** 12-15 Agosto, São Paulo, Brazil
- **Associate Editor** - IEEE International Conference on Robotics and Automation (ICRA). **ICRA 2014**
- **Associate Editor** - IEEE International Conference on Robotics and Automation (ICRA). **ICRA 2013**  
Karlsruhe, May 6 - 10, 2013

### *Assignments abroad*

#### **2008-2011 Visiting scholar (9/2008-12/2011)-Postdoctoral fellow (3/2009-9/2011)**

- Northwestern University, Feinberg School of Medicine, Chicago, USA  
Department of Physical Medicine and Rehabilitation (September 2008-February 2009)

Department of Physiology (March 2009-December 2011)

- Robotics Laboratory, Sensory Motor Performance Program, Rehabilitation Institute of Chicago,  
Chicago, USA.

**Dal 09-04-2012 a oggi - Adjunct Professor** in the department of Physiology, Northwestern University, Chicago, USA

<http://www.feinberg.northwestern.edu/faculty-profiles/az/profile.html?xid=24779>

**dal 19-06-2016 a oggi - Adjunct Associate Professor**, Department of biomedical Engineering, Marquette University, Milwaukee, USA. I am part of the NeuroMotor Control Laboratory -

[http://www.eng.mu.edu/scheidtr/Scheidt\\_MUCOE/People.html](http://www.eng.mu.edu/scheidtr/Scheidt_MUCOE/People.html)).