

# GIOIA LUCARINI

PhD BioRobotics- MSc, BSc Biomedical Engineering

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## Personal information

Date of Birth: 19<sup>th</sup> April 1985

Citizenship: Italian

Languages Spoken: Italian, English

## Present Position

Since November 2013, **Postdoctoral Fellow, Surgical Robotics group** at The BioRobotics Institute of Scuola Superiore Sant'Anna, Pisa, Italy. The main topic is study and development of electromagnetic control for medical robotic milli/micro robots.

## Education Background

From November 4<sup>th</sup> 2009 until November 27<sup>th</sup> 2013, The BioRobotics Institute of Scuola Superiore Sant'Anna Pisa, Italy.

**PhD degree in Innovative Technologies of Info. & Com. Eng. and Robotics.** The main topic is study and development of electromagnetic control and localization strategies for medical robotic microdevices.

From January 4<sup>th</sup> 2013 until July 4<sup>th</sup> 2013, Harvard Medical School

**Research Fellow at Pediatric Cardiac Bioengineering Lab of Harvard Medical School** under supervision of Prof. Pierre Dupont. The main topic is study and development of MRI-powered millirobot for the targeted drug delivery.

June 2013

Certification of completion on **MRI Competency Test** at Brigham & Women's Hospital Radiology, Boston, USA, examiner: Lawrence P. Panych.

Access to Siemens and GE MRI scanners for research.

Permission to modify, program and test MRI-pulse sequences.

February 2013

Certification of completion on **MRI Safety Training** at Brigham & Women's Hospital Radiology Department MRI Safety Training, Boston, USA, instructor: Vera Kimbrell.

July 2011

The authors with <sup>†</sup>equally contributed to the work.

June, 9<sup>th</sup>, 2017

Visiting student at Robot Research Institute, School of Mechanical Systems Engineering, Chonnam National University, Gwangju (South Korea), invitation from Prof. Jong-Oh Park.

October 2010

Enabled to the profession of Engineer by passing the **Italian State Exam**.

From October 13<sup>th</sup> 2007 until September 29<sup>th</sup> 2009, University of Pisa, Italy

**Master Degree in Biomedical Engineering** curriculum Biomedical Technology with a final evaluation of **110/110 with Honours (Magna cum Laude)** and a **GPA value of 29.95/30**. The Thesis entitled “Electromagnetic development for the localization and control of endoscopic capsule” and it was supervised by a collaboration between CRIM Lab (Scuola Superiore Sant’Anna), under the supervision of Prof. Paolo Dario, Prof. Arianna Menciassi and Eng. Pietro Valdastrì, and Department of Electrical Systems and Automation (DSEA) of University of Pisa, under the supervision of Prof. Alberto Landi and Eng. Rocco Rizzo.

From September 27<sup>th</sup> 2004 until October 12<sup>th</sup> 2007, University of Pisa, Italy

**Undergraduate Degree in Biomedical Engineering** curriculum Industrial Engineering with a final evaluation of **110/110 with Honours (Magna cum Laude)** and a **GPA value of 29.83/30**. The thesis entitled: “Microparticle systems as innovative method for controlled alginate cross-linking” was carried on at University of Pisa, Italy, under the supervision of Prof. Maria Grazia Cascone and Prof. Luigi Lazzeri.

### Summer Schools

In September 2011, **5<sup>th</sup> Summer European School in Surgical Robotics**, Lirmm, University of Montpellier, France organized by Prof. P. Poignet (<http://www.sssr2011.org/>) .

In July 2011, **2011 GMSI – BK21MAE Summer Camp**, Seoul National University, Seoul, Korea organized by Prof. Mamoru Mitsuishi and Prof. Joon Sik Lee. Award for “Most Innovative Idea”

In August 2010, Biorobotics Lab, University of Washington, Seattle, Washington, USA **2010 North American Summer School in Surgical Robotics and Simulation**, organized by Prof. Blake Hannaford (<http://brl.ee.washington.edu>).

## Scientific Collaboration in International and National Research Projects

From February 2017, collaborating at the nation project financed by National Institute for Insurance against Accidents at Work (INAIL) entitled “Restoration of the urinary tract and the control of urination by means artificial sphincter (RELIEF)”

Since October 1<sup>st</sup> 2012, collaborating at the **FP7 European Project SUPCAM** entitled “New cost effective and minimally invasive endoscopic device able to investigate the colonic mucosa, ensuring a high level of navigation accuracy and enhanced diagnostic capabilities” (FP7-SME-2012).

The authors with <sup>†</sup>equally contributed to the work.

June, 9<sup>th</sup>, 2017

From December 1<sup>st</sup> 2010 until June 1<sup>st</sup> 2014, collaborating at the **National Project Micro-VAST** – “Microsystems for vascular diagnostics and intervention” (<http://www.microvast.it>).

From January 2009 until June 2011, collaborating at the **FP6 European Project VECTOR** – “Versatile Endoscopic Capsule for gastrointestinal Tumor Recognition and Therapy” (EU/IST-2006-033970) (<http://www.vector-project.com>).

During the last four years, collaborating in writing of different international and national proposals.

## Work Experiences

From March 1<sup>st</sup> 2008 until December 13<sup>th</sup> 2008, a research assistant at Department of Industrial Chemistry, University of Pisa, Italy.

## Teaching and supervision Activity

Support of teaching activity for the course of “Medical Robotics” (M.Sc. Biomedical Engineering, University of Pisa, Italy).

Support of teaching activity for the course of “Mechatronics” (M.Sc. Biomedical Engineering, University of Pisa, Italy).

Advisor in different Master Degree Thesis in Biomedical Engineering, University of Pisa, Italy.

The most recent students are:

- Maria Cristina Palmieri, Design and Development of cerebrovascular phantom, in progress.
- Alessio Vizzoca, Development of biological vectors for cancer therapy, in progress.
- Gioia Nisticò, Design, fabrication and testing of a capsule for controlled drug release in urothelial cancer therapy, in progress.
- Leonardo Marziale, Design of extra-urethral artificial sphincter for the control of incontinence, in progress.
- Francesca Sbaraglia, Design of a magnetic anchoring system for the targeting cerebral tumors by means of magnetic engineered erythrocytes (discussion on April 2016).

Advisor in one Bachelor Degree Thesis in Automatic Engineering, Politecnico di Torino, Italy

## Scientific interests

Medical devices, surgical robots, microrobotics, magnetic control, medical device design, targeted drug delivery.

## Other interests

Leadership and teamwork, Travelling, Technology, and Sport Activity.

## Skills

The authors with <sup>†</sup>equally contributed to the work.

June, 9<sup>th</sup>, 2017

**Computer skills**

Basic knowledge of C language, Access, Latex. Excellent Knowledge of Office package, Pro/Engineer, Matlab & Simulink, Comsol Multiphysics and Labview.

**Languages**

Italian is mother tongue, level of English is good.

**Referee Process**

Referee activity for scientific international conferences and journals: Transactions on Robotics, Transactions of Mechatronics, Transaction on Biomedical Engineering, Sensor and Actuator, International Journal of Robotics Research, International Journal of Advanced Robotic Systems, IEEE International Conference of Robotics and Automation, IEEE International Conference on Biomedical Robotics and Biomechatronics.

Gioia Lucarini has also successfully participated in the Student Review Program at the IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics.

**Publications on refereed journals or conferences proceedings – published (or in press) paper**

See the attached file



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Gioia Lucarini