

# MATTEO LAFFRANCHI

## SUMMARY

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- Engineer with strong experience in international environments and proven team work skills
- Solid technical experience in mechatronics and product development, complemented with business background
- Internationally recognized as an expert in robot design and development, ~10 years' experience in the development of novel mechatronics technology and technology transfer

## PROFESSIONAL EXPERIENCE

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May 2014 - Present      [Istituto Italiano di Tecnologia, Rehab Technologies Dept.](#)      Genova, Italy

*The Istituto Italiano di Tecnologia is an international institute of technology established in 2006 to promote scientific excellence and technological transfer in the fields of: robotics, nanotechnology, drug discovery, neuroscience, and computer vision, among others. Currently, Genova headquarters count up over 1000+ employees and collaborators from over 38 countries.*

### Team Leader, Senior Mechatronic Engineer

Leader of a team of engineers towards the product development and technological transfer of medical robotics products.

Responsibility of the mechatronic development of products in the ~5M€ project budget range. Development of an actuated lower limb exoskeleton for paraplegics from scratch and technological transfer of a humanoid robotic hand turned into a prosthetic hand. Project management following ISO 13485 standards (medical devices quality management systems).

2013-2014      **Witzi**      Pisa, Italy

*Witzi has been a technological start-up operating in the field of open innovation for the tech development of technological design products. Selected and participant of Seedlab 2013, accelerator for innovative start-ups, obtaining 30k€ grant.*

### CTO

Responsible for mechatronic product integration. Business planning, customer acquisition and mechatronics-related R&D. Acquisition of team members and partners.

2012 – May 2014      [Istituto Italiano di Tecnologia, ADVR Dept.](#)      Genova, Italy

### Senior Post-Doctoral Fellow

Management of a team of engineers and researchers towards the development and technological transfer of novel robotics systems such as the CompAct™ arm (<http://tinyurl.com/oq59exz>, <http://tinyurl.com/kohhgt9>). Full responsibility of the CompAct™ project. Worldwide technical project presentations to international scientific audiences and “pitching” business projects in front of investors, potential partners and in business competitions where the project was finalist and awarded in several occasions: <http://tinyurl.com/kx27n3d>. Collaborations with outstanding European companies, research institutes and universities such as KUKA, Fraunhofer institute, Imperial college London, DLR and others in the context of the European project SAPHARI FP7-ICT-2011-7.

May 2012-Sept 2012      **Seedlab**      Firenze, Italy

*SeedLab was an entrepreneurial program that provided micro-seed funding, training and mentorship to facilitate the development of promising early stage startups.*

### Project Leader (CompAct™ Robotics)

CompAct™ Robotics (startup project based on the technology developed by Matteo Laffranchi at iit) was selected for this acceleration program for technological start-ups among 200+ entrepreneurial ideas. Awarded a grant worth 30k€ issued by

TTVenture, one of the largest venture capital funds in Italy. Development of a detailed business plan, networking with investors and other startups, pitching, learnt the bases of business.

2011-2012 [Istituto Italiano di Tecnologia, ADVR Dept.](#) Genova, Italy

#### Junior Post-Doctoral Fellow

Development of full robots based on the invented and patented VPDA technology (see patents list), leading to the achievement of the research grant related to the project FP7-ICT-2011-7 SAPHARI (budget ~1M€). Coordination of a research team made by PhD students and engineers. Creator and leader of the "CompAct™ Robotics" entrepreneurial project, which included the creation of a work team made of international members with diversified technical and business backgrounds. Worldwide project presentations to international audience.

2008-2011 [Istituto Italiano di Tecnologia, ADVR Dept.](#) Genova, Italy

#### Fellow

Development of novel actuation systems for safe human robot interaction. Invention and development of the Variable Physical Damping Actuation (VPDA) technology, which has been the basis of the work done during the following years and is now protected by a group of international patents, see patent list.

2008 [OSAI A.S.](#) Parella (TO), Italy

*OSAI A.S. is a medium size company operating in the automation industry. This company is well known in its market for its capability in providing highly customised solutions and special machinery.*

#### Mechatronics Engineer

Responsible for the design of a control architecture for the control of an automated selective laser soldering station. Promotion of new technological products to clients through demonstrators and fairs, after sales customer service.

## EDUCATION

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2012 [MIB School of Management](#) Firenze, Italy

Course on High Tech Entrepreneurship, final mark A-. Worth 20 ECTS.

Entrepreneurial finance, business modelling, innovation management, legal and HR, marketing and strategy, pitching, business planning.

2008-2011 [The University of Sheffield](#) Sheffield, UK

PhD in Robotics.

The University of Sheffield is considered among the best UK universities and ranked 71<sup>st</sup> worldwide.

2004-2007 [Politecnico di Torino](#) Torino, Italy

MS in Mechatronics engineering, final mark: 110/110.

2001-2004 [Politecnico di Torino](#) Ivrea, Italy

BS in Mechatronics engineering.

## PATENTS

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- N.G.Tsagarakis , Matteo Laffranchi , Bram Vanderborcht and D.G.Caldwell , "Attuatore rotante elastico, particolarmente per applicazioni robotiche, e metodo per il suo controllo", Italian Patent TO2010A000257
- N.G.Tsagarakis , Matteo Laffranchi , Bram Vanderborcht and D.G.Caldwell, "Elastic rotary actuator, particularly for robotic applications, and method for its control", United States Patent Application US 2010/0253273 A1
- N.G.Tsagarakis , Matteo Laffranchi , Bram Vanderborcht and D.G.Caldwell, "Elastic rotary actuator, particularly for robotic applications, and method for its control", European Patent Application EU 10158648
- Matteo Laffranchi, N.G.Tsagarakis and D.G.Caldwell "Attuatore rotante elastico, particolarmente per applicazioni robotiche con dispositivo di smorzamento semi-attivo" Italian Patent TO2010A000360.

- Matteo Laffranchi, N.G.Tsagarakis and D.G.Caldwell"Elastic rotary actuator, particularly for robotic applications, provided with semi-active damping device" International Patent PCT/IB2011/051877.

## OTHER

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- Languages: Italian (mother tongue), English (fluent), Spanish (basic);
- Technical Skills: Mechanical design (CAD): ProE, Creo; Coding: C, C++; Modelling and control design: matlab, simulink, labview; Project management; Manual skills: mechanical assembly, usage of lab equipment, soldering, 3D printing
- Linkedin: [it.linkedin.com/pub/matteo-laffranchi/2a/996/613/](https://www.linkedin.com/pub/matteo-laffranchi/2a/996/613/)
- Publications list: <https://sites.google.com/site/matteolaffranchiweb/work/research/publications>;  
<http://scholar.google.it/citations?user=LbsBEi8AAAAJ&hl=it>