

Curriculum Vitae

Marco D'Alonzo

Personal information

First name(s) / Surname(s) **Marco D'Alonzo**
Address(es) Via dei Ciliegi, 6, 56025, Pontedera, Italia.
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E-mail m.dalonzo@sssup.it, marco_dalonzo@yahoo.it
Nationality Italian
Date of birth 24/08/1983
Gender Male

Work experience

Winner of **research grant** within WAY, NEBIAS, INAIL PPR3 and FIRB My Hand projects
Dates From December 2014 to now
Occupation or position held PostDoc fellow
Main activities and responsibilities Psychophysical tests for evaluation of new sensory substitution devices (vibrotactile and electrotactile stimulators) with able-bodied and amputee participants (test to evaluate the discrimination capability and the embodiment of artificial hand, finger and foot), study on the biomechanics of skin and human fingertip, design and evaluation of new artificial soft fingertips capable to provide tactile (vibrotactile and thermal) stimulation.
Name and address of employer Prof. Christian Cipriani. The Biorobotics Institute, Scuola Superiore Sant'Anna, viale Rinaldo Piaggio 34, 56025, Pontedera (PI), Italia
Type of business or sector Research

Work experience

Winner of **research grant** within WAY, CogLaboration and CyberLeg project
Dates From December 2011 to December 2014
Occupation or position held PhD student/ PostDoc fellow
Main activities and responsibilities Psychophysical tests for evaluation of new sensory substitution devices (vibrotactile and electrotactile stimulators) with able-bodied and amputee participants (test to evaluate the discrimination capability and the embodiment of artificial hand and foot), study on the biomechanics of skin and human fingertip, design and evaluation of new artificial soft fingertips.
Name and address of employer Prof.ssa Maria Chiara Carrozza. The Biorobotics Institute, Scuola Superiore Sant'Anna, viale Rinaldo Piaggio 34, 56025, Pontedera (PI), Italia
Type of business or sector Research

Work experience

Winner of **Scholarship for an abroad period**
Dates From March 2012 to September 2012
Occupation or position held Visiting PhD student/ fellow
Main activities and responsibilities Psychophysical tests for evaluation of new hybrid vibro- and electro-tactile feedback device
Name and address of employer Prof. Dario Farina, Department of Neurorehabilitation Engineering, Georg-August University, Von-Siebold-Str. 6, Goettingen, Germany
Type of business or sector Research

Work experience

Winner of **research grant** within NANOBOTACT and NANOBOTOUCH project
Dates From December 2008 to December 2011
Occupation or position held PhD student/ fellow
Main activities and responsibilities Development of psychophysical tests for study the human capability of discrimination different tactile stimuli and data elaboration and analysis, development and improvement of a tactile stimulator for studying the biomechanics of human fingertip, Psychophysical tests for evaluation of new vibrotactile device, design and evaluation of new artificial soft fingertips

Name and address of employer	Prof.ssa Maria Chiara Carrozza. The Biorobotics Institute, Scuola Superiore Sant'Anna, viale Rinaldo Piaggio 34, 56025, Pontedera (PI),Italia
Type of business or sector	Research
Work experience	Winner of research grant within ENABLE project
Dates	From June 2008 to December 2008
Occupation or position held	PhD student/ fellow
Main activities and responsibilities	Development of psychophysical test for the study of human capability to discriminate different stimuli, support to development of copies of a tactile stimulator
Name and address of employer	Prof.ssa Maria Chiara Carrozza. The Biorobotics Institute, Scuola Superiore Sant'Anna, viale Rinaldo Piaggio 34, 56025, Pontedera (PI),Italia
Type of business or sector	Research
Work experience	Apprenticeship for master degree thesis in Biomedical engineering
Dates	From September 2007 to April 2008
Occupation or position held	Hearing care professional
Main activities and responsibilities	Development of a software for a platform for tactile stimulation, development of psicophysical test for assessing the platform
Name and address of employer	Prof.ssa Maria Chiara Carrozza. The Biorobotics Institute, Scuola Superiore Sant'Anna, viale Rinaldo Piaggio 34, 56025, Pontedera (PI),Italia
Work experience	Apprenticeship for bachelor thesis in Biomedical engineering
Dates	From June 2005 to December 2005
Occupation or position held	Hearing care professional
Main activities and responsibilities	Development of polymers developed by molecular imprinting for tissue engineering
Name and address of employer	Prof. Paolo Giusti, Biomaterials group, Department of Chemical Engineering and Material Science, Università di Pisa, via Diotalvi 2, 56100, Pisa, Italia
Education and training	PhD in Biorobotics (Magna cum laude)
Dates	Achieved in November 2012
Name and type of organisation providing education and training	Scuola Superiore Sant'Anna, Piazza Martiri della Libertà 33 - 56127 Pisa
Education and training	Professional qualification
Dates	Achieved in September 2008
Name and type of organisation providing education and training	University of Pisa, Faculty of Engineering, Via Diotalvi 2 - 56122 Pisa
Education and training	Master degree in biomedical engineering (Magna cum laude)
Dates	Achieved in April 2008
Name and type of organisation providing education and training	University of Pisa, Faculty of Engineering, Via Diotalvi 2 - 56122 Pisa
Education and training	Bachelor degree in biomedical engineering (Magna cum laude)
Dates	Achieved in December 2005
Name and type of organisation providing education and training	University of Pisa, Faculty of Engineering, Via Diotalvi 2 - 56122 Pisa

Personal skills and competences

Mother tongue(s)

Italian

Other language(s)

English, German

Self-assessment

European level (*)

English

German

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
B1	Intermediate level	B2	Intermediate level	B1	Intermediate level	B1	Intermediate level	B1	Intermediate level
A1	Beginner level	A1	Beginner level	A1	Beginner level	A1	Beginner level	A1	Beginner level

Organisational skills and competences

My work within the lab of Scuola Superiore Sant'Anna allows me to enhance my **capability to work in team**, such capability has partly been developed during university and high school by working with other students for projects and course, and for my active involvement in an association of blood donor (AVIS) for the promotion of blood donation. In addition, during my period of work and study I had the opportunity to travel, learn and interface with people of different culture, by working in European project (NANOBIOTACT, NANOBIOTOUCH, WAY, CogLaboration, CyberLegs) and participating in international summer school. I worked for **6 months** in **Neurorehabilitation department in Goettingen University** (Goettingen, Germany) during my abroad period. In addition, during my Post-Doc period I worked with amputees people (both lower and upper limbs amputees) both by collaborating with associations of amputees (**ANMIL**: National association of maimed and disable people on work) and research centers (**Don Gnocchi Center**, **INAIL**: Italian Workers' Compensation Authority), this allows me to understand their difficulties and issues. Additionally, my work as **Lab Manager** of Artificial Hand Area (AHA) improved my lab organizational skills, by taking care of devices and tool of the lab and space organization.

Technical skills and competences

I worked with **strumentation for chemical analysis** (such as HPLC and SEM) during my bachelor degree apprenticeship. I developed **capability to work in chemical lab**. During ENABLE scholarship I developed **capability to work in electronic lab**. In addition, during master degree apprenticeship and during my work in Scuola Sant'Anna as well, I learned **psychophysical techniques and protocols** for evaluation of human discrimination capabilities and tools of **statistical analysis**. My work in Italian (OpenHand, MyHand, INAIL PPR3) and European projects (NANOBIOTACT, NANOBIOTOUCH, WAY, CogLaboration, CyberLegs) allows me to know how **develop reports and deliveries** of working activity.

Computer skills and competences

During high school I learned to work on **Window** and office suite (**Word, Excel, e powerpoint**), and improve this knowledge at university and in working activities. I learned to work on **Matlab** software at University, and I enhanced the knowledge on such software, in particular, the **statistical tools**, during master degree apprenticeship and time spent at Scuola Sant'Anna. In the meantime I learned to work on **Labview** enviroment. I worked with **CVI** and **Adobe premiere** software. I work also with **Visio office, Gimp, Inkscape** software. I have also basic knowledge of software **R**. At university I worked with **C++** language, and **Mathcad** software for projects and courses. In addition, I attended courses that provide elements of **Assembly** language and **Comsol** software. I also know **serial communication protocols**, this knowledge was acquired during my working period in Scuola Superiore Sant'Anna.

Driving licence

Driving license **B**

Additional information

Publications on ISI Journal

“Non-invasive, temporally discrete feedback of object contact and release improves grasp control of closed-loop myoelectric transradial prostheses”, Clemente F, **D’Alonzo M**, Controzzi M, Edin B, Cipriani C, IEEE Trans. on Neural Systems and Rehabilitation Engineering, in press (online 2015).

“The rubber foot illusion”, Crea S, **D’Alonzo M**, Vitiello N, Cipriani C, Journal of NeuroEngineering and Rehabilitation 2015, 12:77 (2015).

“Vibrotactile stimulation promotes embodiment of an alien hand in amputees with phantom sensations”, **D’Alonzo M**, Clemente F, Cipriani C, IEEE Trans. on Neural Systems and Rehabilitation Engineering, 23(3): 450-457 (2015).

“Bioinspired fingertip for anthropomorphic robotic hands”, Controzzi M, **D’Alonzo M**, Peccia C, Oddo CM, Carrozza MC, Cipriani C, Applied Bionics and Biomechanics, 11(1-2): 25-38 (2014).

“HyVE – Hybrid Vibro-Electrotactile Stimulation – is an Efficient Approach to Multi-Channel Sensory Feedback”, **D’Alonzo M**, Došen S, Cipriani C, Farina D, IEEE Transactions on Haptics, 7(2): 181-90 (2014). Special issue

“HyVE: Hybrid Vibro-Electrotactile Stimulation for Sensory Feedback and Substitution in Rehabilitation”, **D’Alonzo M**, Došen S, Cipriani C, Farina D, IEEE Trans. on Neural Systems and Rehabilitation Engineering, 22 (2): 290-302, (2014)

“Vibrotactile sensory substitution elicits feeling of ownership of an alien hand”, **D’Alonzo M**, Cipriani C, PLoS ONE, 7(11): 1-9 (2012)

“Sensory feedback in upper limb prosthetics,”, Antfolk C, **D’Alonzo M**, Lundborg, G, Rosen, B, Sebelius, F, Cipriani, C, Expert Review of Medical Devices, 10(1): 45–54 (2013)

“Artificial redirection of sensation from prosthetic fingers to the phantom hand map on transradial amputees: vibrotactile versus mechanotactile sensory feedback”, Antfolk C, **D’Alonzo M**, Controzzi M, Lundborg, G, Rosen, B, Sebelius, F, Cipriani, C, IEEE Transaction Neural System Rehabilitation Engineering, 21(1): 112-20 (2013).

“A miniature sensory substitution device for multi- fingered hand prosthetics”, Cipriani C, **D’Alonzo M**, Carrozza MC, IEEE Transactions on Biomedical Engineering, 59(2): 400-8 (2012).

Patent

“Dispositivo per ritorno sensoriale”, Clemente F, **D’Alonzo M**, Edin BB, Cipriani C, Italian priority no. PI2014A000045, Holder: Scuola Superiore Sant’Anna | Uminova Holding AB, July 2014

Selection of publications on international workshop and conference

“Vibrotactile feedback elicits embodiment of robotic hand in active motor task”, **D’Alonzo M**, Cipriani C, Intl Workshop Human Friendly Robotics 2014, Pontedera, Italy

“The HyVE: Hybrid Vibro-Electrotactile stimulation for sensory feedback in upper limb prostheses”, **D’Alonzo M**, Dosen S, Cipriani C, Farina D, In proceeding of “International Conference on Neurorehabilitation”, November 14-16, 2012, Toledo, Spain

“Physical properties that contribute to roughness discrimination of textures with randomly distributed asperities”, **D’Alonzo M**, Vitiello N, Kwok HF, Beccai L, Oddo CM, Wing AM, Carrozza MC, In proceeding of workshop on: Advanced in tactile sensing and touch based human- robot interaction, March 5, 2012, Boston, Massachusetts

“Vibrotactile sensory substitution in multi-fingered hand prostheses: Evaluation Study”, **D’Alonzo M**, Cipriani C, Carrozza MC, In proceeding of “International Conference of Rehabilitation Robotics”, June 29- July 1, 2011, Zurich, Switzerland

“Human tactile studies on discrimination threshold for biomimetic force sensitive artificial fingertip development”, **D’Alonzo M**, Beccai L, Wing AM, Carrozza MC, In proceeding of “Tactile sensing in humanoids-Tactile sensors and beyond” workshop at “Humanoids 2009”, December 7, 2009, Paris, France

Publications on national conference

“DESC Glove: a wearable sensory feedback device for commercially available hand prostheses”, Clemente F, **D’Alonzo M**, Cipriani C, Gruppo nazionale di bioingegneria quarto congresso (GNB2014), June 25th-27th, Pavia, Italy

“Design of biomimetic artificial fingertips and analysis of stiffness at the contact”, **D’Alonzo M**, Controzzi M, Peccia C, Cipriani C, Carrozza MC, Gruppo nazionale di Bioingegneria terzo congresso (GNB2012), June 26th-29th, Rome, Italy

“Design of an Anthropomorphic Robotic Hand with Intrinsic Actuation and Compliant Fingers”, Controzzi M, Cipriani C, **D’Alonzo M**, Peccia C, Carrozza MC, Gruppo nazionale di Bioingegneria terzo congresso (GNB2012), June 26th-29th, Rome, Italy