STEFANO MAZZOLENI
Curriculum Vitae et Studiorum

PERSONAL DATA

First Name	Stefano
Family Name	Mazzoleni
Birth place and date	Milano, Italy, March 27, 1971
Business address	Polytechnic University of Bari Department of Electrical Engineering and Information Technology Via E. Orabona 4 – 70126 Bari, Italy
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ORCID	http://orcid.org/0000-0002-9528-3239
ResearcherID	http://www.researcherid.com/rid/B-5875-2011
Scopus Author ID	8780546800
h-index (Scopus):	15
Total citations (Scopus):	655

ACADEMIC POSITIONS AND ROLES

- **Assistant Professor,** at the BioRobotics Institute of Scuola Superiore Sant'Anna in Pisa, Italy, since May 2015.
- **Coordinator** of the Rehabilitation Bioengineering Laboratory, Volterra, Italy, since 2011 to date.
- **Post-doc Fellow** at the BioRobotics Institute of Scuola Superiore Sant'Anna in Pisa, Italy, since April 2007 to April 2015.
- **Visiting Researcher** at Department of Neurophysiology, Katholieke Universiteit Leuven, Belgium, December 1-23 2005.
- **Research Assistant in Biomedical Engineering** at the ARTS Lab (Advanced Robotics Technology and Systems Laboratory) of Scuola Superiore Sant'Anna in Pisa, Italy, from June 2002 to March 2007.

EDUCATION

- **Ph.D. in Bioengineering, Materials Engineering and Robotics (curriculum Robotics),** from the University of Genova, Italy, in April 2007, with research activity carried out at the ARTS Lab of the Scuola Superiore Sant'Anna in Pisa.

  Title of the Ph.D. dissertation: "Post-stroke robot-mediated therapy and functional assessment with platform for isometric measurements".

  Co-ordinator: Prof. Sergio Martinoia (Department of Biophysical and Electronic Engineering, University of Genova).

  Tutor: Prof. Paolo Dario (Scuola Superiore Sant'Anna, Pisa).

  Co-tutors: Prof.ssa Maria Chiara Carrozza (Scuola Superiore Sant'Anna, Pisa), Prof. Eugenio Guglielmelli (Scuola Superiore Sant'Anna, Pisa), Dr. Silvestro Micera (Scuola Superiore Sant'Anna, Pisa).
- **Master Degree in Computer Engineering** (Laurea in Ingegneria Informatica - Vecchio Ordinamento) *(curriculum Automation and Industrial Automation Systems)* from University of Pisa, Italy in December 2002.

  Graduation thesis developed at the Department of Electrical Systems and Automation, University of Pisa, Italy.

Title of the graduation thesis: "Interfaccia grafica per ETR500" (User graphical interface for ETR500).

Tutors: Prof. Aldo Balestrino (Department of Electrical Systems and Automation, University of Pisa), Prof. Alberto Landi (Department of Electrical Systems and Automation, University of Pisa), Prof. Giancarlo Zini (Department of Electrical Systems and Automation, University of Pisa).

OTHER EDUCATIONAL ACTIVITIES

- **Post-Doc Fellowship.** The fellowship was provided by Regione Toscana upon a competitive call, for supporting research activities on the project "*TECTUM - Sviluppo e applicazione di TECnologie per la Televalutazione, la comUnicazione alternativa e l'automazione ambientale di pazienti con disabilità gravi e gravissiMe"*, funded under POR Regione Toscana Competitiveness and Employment Regions 2007-2013, from March 2010 to February 2013.
- **Post-Doc Fellowship.** The fellowship was provided by Scuola Superiore Sant'Anna upon a competitive call (1° ranking, final mark 93/100), for supporting research activities on the research project *"ENABLE - Enhancing human ability for employability"*, funded under POR Regione Toscana Ob. 3 FSE 2000-2006 Asse D Misura D4, in the field of bioengineering and neurorehabilitation, from October 2007 to December 2008.

AWARDS

- **Student Travel Award IEEE International Conference on Rehabilitation Robotics.** The award was assigned to 12 researchers during the 9th IEEE International Conference on Rehabilitation Robotics, *"Frontiers of the Human-Machine"* in Chicago, Illinois, USA, 28 June – 1 July 2005. The award was assigned to Stefano Mazzoleni from *Travel Awards Committee* as first and corresponding author of the article *"ALLADIN: A novel mechatronic platform for assessing post-stroke functional recovery"*.
- **Innovation Business Award, category: Robotics** promoted by the Young Innovators National Association (ANGI – Associazione Nazionale Giovani Innovatori) as scientific coordinator of the RISE research project, funded by INAIL, aimed to develop an innovative robotic wheelchair for verticalisation and mobility of persons affected by severe lower limbs impairments. The award ceremony has been held at the Italian Parliament (Camera dei Deputati) in Rome on December 14 2018.

OTHER EDUCATIONAL EXPERIENCES

- **23rd Annual School of Biomedical Engineering, of the Italian National Group of Biomedical Engineering (GNB)**, "Metodi avanzati di elaborazione di segnali biomedici", Bressanone (Bolzano), 20-23 September 2004.
- **24th Annual School of Biomedical Engineering, of the Italian National Group of Biomedical Engineering (GNB)**, XXIV Scuola Annuale di Bioingegneria "Biomateriali: dagli impianti protesici alla medicina rigenerativa", Bressanone (Bolzano), 26-29 September 2005.
- **25th Annual School of Biomedical Engineering, of the Italian National Group of Biomedical Engineering (GNB)**, "Neuro-robotica: la fusione di neuroscienze e robotica per lo sviluppo di macchine intelligenti", Bressanone (Bolzano), 25-29 September 2006.
- **26th Annual School of Biomedical Engineering, of the Italian National Group of Biomedical Engineering (GNB)**, "Genomica e Proteomica Computazionale", Bressanone (Bolzano), 24-28 September 2007.
- **27th Annual School of Biomedical Engineering, of the Italian National Group of Biomedical Engineering (GNB)**, "Sistemi indossabili intelligenti per la salute e la protezione dell'uomo", Bressanone (Bolzano), 14-19 September 2008.
- **28th Annual School of Biomedical Engineering, of the Italian National Group of Biomedical Engineering (GNB)**, "Bioingegneria per le neuroscienze cognitive", Bressanone (Bolzano), 7- 11 September 2009.

- **29th Annual School of Biomedical Engineering, of the Italian National Group of Biomedical Engineering (GNB)**, "Biologica sintetica", Bressanone (Bolzano), 13 - 17 September 2010.
- **30th Annual School of Biomedical Engineering, of the Italian National Group of Biomedical Engineering (GNB)**, "Neuroinformatica ", Bressanone (Bolzano), 19 - 23 September 2011.
- **31st Annual School of Biomedical Engineering, of the Italian National Group of Biomedical Engineering (GNB)**, "Dalla ricerca al mercato: trasformare il risultato della ricerca in un prodotto", Bressanone (Bolzano), 17 - 21 September 2012.
- **32nd Annual School of Biomedical Engineering, of the Italian National Group of Biomedical Engineering (GNB)**, "Approccio Integrato per la Medicina Rigenerativa", Bressanone (Bolzano), 16 - 20 September 2013.
- **33rd Annual School of Biomedical Engineering, of the Italian National Group of Biomedical Engineering (GNB)**, "La Bioingegneria: dal recupero funzionale all'organo artificiale", Bressanone (Bolzano), 22 - 25 September 2014.
- **34th Annual School of Biomedical Engineering, of the Italian National Group of Biomedical Engineering (GNB)**, "Approcci ingegneristici per lo sviluppo di metodiche alternative alla sperimentazione in vivo", Bressanone (Bolzano), 21 - 24 September 2015.
- **35th Annual School of Biomedical Engineering, of the Italian National Group of Biomedical Engineering (GNB)**, "La Bioingegneria per il benessere e l'invecchiamento attivo", Bressanone (Bolzano), 26 - 29 September 2016.
- **36th Annual School of Biomedical Engineering, of the Italian National Group of Biomedical Engineering (GNB)**, "E-Health - Medicina digitale", Bressanone (Bolzano), 18-22 September 2017.
- **37th Annual School of Biomedical Engineering, of the Italian National Group of Biomedical Engineering (GNB)**, "Immagini biomediche: nuove tendenze in tecnologia, metodiche applicazioni", Bressanone (Bolzano), 10 - 13 September 2018.
- **38th Annual School of Biomedical Engineering, of the Italian National Group of Biomedical Engineering (GNB)**, "Advanced Bioengineering methods, technologies and tools in surgery ad therapy", Bressanone (Bolzano), 9 - 12 September 2019.
- **1st Summer School on "Human-Robot Interaction"**, promoted by *IEEE Robotics and Automation Society e International Foundation of Robotics Research*, Volterra, Italy, 19-23 July 2004.
- **Course on "High-technology entrepeneurship"** (Corso ad alto impatto "Diventare imprenditori nell'alta tecnologia"), Polo Sant' Anna Valdera, Pontedera, Italy, June - July 2003.

EXPERTISE

Research expertise in the following fields:

- biorobotics: design of rehabilitation robotic systems, including the application of user-oriented and human-centred design methods (users' needs analysis and clinical validation);
- control systems: design and development of control algorithms;
- human-robot interaction and interfaces for robots and bionic systems;
- human-machine interfaces: development of pre-processing and post-processing software analysis tools;
- assistive technologies;
- patient-ventilator interaction;
- ICT systems for telemonitoring and telerehabilitation applications.

Capabilities of:

- supervision of research programs by graduate and PhD students;
- formulation of research projects and preparation of proposals;
- coordination of research teams;
- collaboration with international partners;
- management of EU-funded projects and preparation of technical documents;
- management of industrial research projects;
- exploitation of research results towards industry;
- organization of international scientific events.

Technical expertise in:

- robotic arms (TLArm by Telerobot Srl);
- F/T sensors;
- software tools: programming languages (Matlab, C/C++, Pascal, VisualBasic), computer graphics tools, html editors, office automation tools.

LANGUAGES

Italian mother tongue

English
- Reading skills: excellent
- Writing skills: excellent
- Verbal skills: excellent

German
- Reading skills: good
- Writing skills: good
- Verbal skills: good

RESEARCH ACTIVITY (2002-2020)

The wide framework for the research activities by Stefano Mazzoleni is **Bioengineering**. In such domain, Stefano Mazzoleni has carried out research activities especially in **Biomedica**l **Robotics** and **E-health ICT applications**, with special interest in the following areas:

- control algorithms for robotic systems;
- movement biomechanics, focused on the analysis of changes due to neurological pathologies;
- design, development and validation of robotic and mechatronics systems for rehabilitation and analysis of human motor control;
- design, development and validation of technological devices and model for functional assessment in neurorehabilitation;
- data pre-processing and post-processing of physiological parameters using ICT biomedical applications (tele-monitoring applications);
- design, development and validation of ICT systems for neurological, cardiac and respiratory for remote control (tele-rehabilitation).

The accomplishment of the research activities described above required a significant effort from the scientific and technical viewpoint. I spent such effort in the study of the problems addressed and in the synthesis of solutions with a bioengineering method which, starting from the knowledge of the biological systems taken as reference, allowed to formulate theoretical models and to design, develop and clinically experiment the proposed solutions.

In addition to this, I carried out most activities in multidisciplinary teams, which sometimes I personally coordinated. This required specific capabilities of teamwork and coordination of research team, as well as of interaction and collaboration with international partners and with clinical partners. Furthermore, on each research theme addressed, I devoted a personal effort to

obtain financial support from national and European agencies and companies, through the preparation of adequate project proposals and the successive accomplishment of the projects, not only concerning the scientific and technical aspects, but also in the coordination and management issues.

International and national scientific activities summary

- From 2009 to 2016 member of Scientific-Technical Committee of "Auxilium Vitae" Rehabilitation Center, Volterra, Italy.
- From 2011 to 2016 member of Scientific-Technical Committee of Rehabilitation Bioengineering Laboratory, Volterra, Italy.
- From 2016 member of Scientific-Technical Committee of Volterra Research Foundation.
- From 2016 coordinator of Chapter on Robotics, technologies for rehabilitation and tele-rehabilitation, Italian Society of Neurological Rehabilitation (Società Italiana di Riabilitazione Neurologica, SIRN).
- Member of the Robotics in Rehabilitation Committee of European Society of Physical and Rehabilitation Medicine (ESPRM), https://er2school.com/
- Member of Promoting Committee, member of the Scientific-Technical Committee and Coordinator of working group on Classification of devices of National Consensus Conference on "Rehabilitation assisted by robotic and electromechanical devices for persons with neurological disabilities", promoted by Italian Society of Neurological Rehabilitation (Società Italiana di Riabilitazione Neurologica, SIRN) and Italian Society on Physical Medicine and Rehabilitation (Società Italiana di Medicina Fisica e Riabilitativa, SIMFER).
- Member of the Italian Institute of Robotics and Intelligent Machines (I-RIM) since 2019.
- Scientific representative member of Scuola Superiore Sant'Anna on the Agreement among Azienda USL Toscana Nord-Ovest, Comune di Lucca, Associazione Amici del Cuore Onlus di Lucca and Ordine dei Medici della Provincia di Lucca for a project on support of healthcare processes for persons affected by rare diseases (Academic Senate Act issued on November 12, 2019)
- Member of the National Bioengineering Group (Gruppo Nazionale di Bioingegneria, GNB) from 2002 to August 2019.
- Member of the Association National Bioengineering Group (Associazione Gruppo Nazionale di Bioingegneria, GNB) since September 2019.
- Guest Editor, Thematic Series on "Assistive Technology and Brain Machine Interface", Journal of NeuroEngineering and Rehabilitation (2019).
- Associated Editor, 2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2019), November 4 - 8, 2019, Macau, China.
- Associated Editor, 2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2020), October 25-29, 2020, Las Vegas, USA.
- From 19 to 30 March 2018 Visiting Professor at Penn Institute for Rehabilitation Medicine, University of Pennsylvania (Prof. Michelle Johnson), Children's National Medical Center, Washington DC (Dr. Kevin Cleary) and Mechanical Department, Columbia University, New York City (Prof. Sunil Agrawal).
- Program co-chair, International Conference on NeuroRehabilitation 2018 (ICNR 2018), Pisa, 16-20 ottobre 2018.
- Associated Editor for Rehabilitation and Assistive Devices - Neuro robotics, 7th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob 2018), August 26-29, 2018, Enschede, The Netherlands.
- Associated Editor, 2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2018), October 1-5, 2018, Madrid, Spain.
- Member of Scientific Committee of 4th Internation workshop "NeuroSpine - Regeneration & Rehabilitation in Brain and Spinal Cord Injuries: from cells to Bioengineering and Neuroinformatics applications", June 28, 2019, Rehabilitation Sciences Institute, University of Toronto (Canada).
- Member of Scientific Committee of 2nd Workshop "NeuroSpine, Regeneration & Rehabilitation in Spinal Cord Injury: From Cells to Bioengineering and Neuroinformatics applications" (Segrate, Italy, 16 November 2017).

- In 2004 member of Local Organising Committee of "1st IEEE/IFRR Summer School on Human-Robot Interaction", Volterra, 19-23, Italy, July 2004.
- In 2006 member of Local Organising Committee of "1st IEEE/RAS-EMBS International Conference on Biomedical Robotics and Biomechatronics" (BIOROB), Pisa, Italy, 20-22 February 2006.
- In 2008 member of Local Organising Committee of 1° Congresso Nazionale di Bioingegneria, Pisa, Italy, 3-5 July 2008.
- In 2011 organiser of the Workshop "Robotics for rehabilitation: current impact on clinical practice and challenges for improving quality of life" (European Robotics Week, 28 November – 4 December 2011), Volterra, Italy, 2 December 2011.
- In 2012 Exhibition and Special Events Chair of 4th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics (BIOROB 2012) (Roma, Italy, 24-28 June 2012).
- In 2012 organiser of the Workshop "Robotics for neuro-rehabilitation: challenges for improving impact on clinical practice" e il Workshop "Control problems in mechanical ventilators", 4th IEEE International Conference on Biomedical Robotics and Biomechatronics (BIOROB 2012) (Roma, Italy 24 June 2012).
- In 2013 organiser of the Workshop "Robotics for neuro-rehabilitation: strategies to increasing impact on clinical and industrial field", 13th International Conference on Rehabilitation Robotics (ICORR 2013) (Seattle, WA, USA, 26 June 2013).
- In 2014 organiser of the Workshop "Robotics for neuro-rehabilitation: paradigm change for a real technological and clinical breakthrough?", 5th IEEE/RAS-EMBS International Conference on Biomedical Robotics and Biomechatronics (BIOROB 2014) (São Paulo, Brasile, 12-15 August 2014).
- In 2014 member of Organising Committee of Workshop "Novel patient-robot interfaces and multimodal interaction in Rehabilitation Robotics", IEEE RO-MAN '14 - The 23rd IEEE International Symposium on Robot and Human Interactive Communication (Edinburgh, Scotland, UK, 25 August 2014).
- In 2015 member of Scientific Programme Committee of 14th edition of the IEEE/RAS-EMBS International Conference on Rehabilitation Robotics (Singapore, 11 - 14 August 2015).
- Member of Organising Committee of Workshop "Affordable rehabilitation and assistive robotics for low resource settings and developing Countries", 14th IEEE/RAS-EMBS International Conference on Rehabilitation Robotics (ICORR 2015) (Nanyang Technological University, Singapore, 11 August 2015).
- Member of Scientific Committee of 3rd Workshop nazionale "Fisica e Informatica in Medicina Diagnostica per immagini e sistemi informatici RIS-PACS, Medicina Nucleare e strumentazione in terapie sanitarie, Medicina Fisica, Riabilitazione e Telemedicina" (Desio, Italy, 26 February 2018).
- Member of Scientific Committee of 2nd Workshop "NeuroSpine, Regeneration & Rehabilitation in Spinal Cord Injury: From Cells to Bioengineering and Neuroinformatics applications" (Segrate, Italy, 16 November 2017).
- Member of Scientific Committee of 5th Workshop on "NeuroInformatica, Neuroimaging, NeuroRobotica, NeuroRiabilitazione, NeuroRigenerazione" (Milano, Italy, 30 September 2015).
- In 2015 member of International Committee of "TeleMediCare 2015, Tele-Medicine & Tele-Care for elderly and disability people" (Desio, Italy, 1-2 October 2015).
- In 2015 member of Scientific Committee of the Workshop "Biomedical technologies in pulmonary rehabilitation: challenges for research in clinical and telemonitoring applications" (Volterra, Italy, 27 November 2015).
- In 2015 member of Scientific Committee "La dimissione difficile del paziente complesso" (Volterra, Italy, 28 November 2015).
- From 2015 to present member of Research and Innovation Committee of Healthcare Local Agency (Azienda USL5 Pisa, now Azienda ASL Toscana Nord Ovest).
- From 2016 member of Cochrane Rehabilitation.
- Member of International Scientific Committee della Human-Machine Interaction Summer School (HMISS) 2017 (Maratea, 18 - 23 settembre 2017).
- Member of Executive Program Committee of the 7th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob 2018).

- Program co-chair of 2018 IEEE International Conference on Intelligence and Safety for Robotics (IEEE ISR2018) (August 24-27, 2018, Shenyang, China).
- Program co-chair of International Conference on Neurorehabilitation 2018 (ICNR2018) (Pisa, Italy, 16-20 October 2018).
- Member of the Program Committee of the 2020 International Conference on Intelligent Computing (ICIC 2020).
- In 2005 Visiting Researcher at Department of Neurophysiology, Katholieke Universiteit Leuven, Belgio (1-23 December) in the framework of EU-FP7 ALLADIN research project.
- Collaboration with Tianjin University (China) and Khalifa University (United Arab Emirates) in the framework of joint research projects on rehabilitation bioengineering and biorobotics.
- Invited as Session Chair in several international scientific conferences.
- In 2017 reviewer for NASA Solicitation and Proposal Integrated Review and Evaluation System (NSPIRES), Experimental Program to Stimulate Competitive Research (EPSCoR).
- Reviewer for Agence Nationale de la Recherche (French National Research Agency).
- June 2017 reviewer of Athene Young Investigator Programme 2017, Technische Universität Darmstadt (Germany).
- From January 2018 member of Neurobioethics group at Ateneo Pontificio Regina Apostolorum in Roma, Italy.

FUNDED PROJECTS (2009-2020)

- From January 15 2018 scientific coordinator for the BioRobotics Institute of research project VERSUS (Virtual-Reality Enhanced Rehabilitation for Sustainable and Usable Services) (2018-2020), funded by Regione Toscana, within FESR 2014-2020 framework (Bando n.2: progetti strategici di ricerca e sviluppo delle MPMI) (budget: 211.229,00 €)
- From June 15 2018 scientific coordinator for the BioRobotics Institute of research project ARCONTE (Piattaforma multidisciplinare web-based integrata per la gestione delle procedure perioperatorie e delle pratiche medico chirurgiche) (2018-2020), funded by Regione Toscana, within FESR 2014-2020 framework (Bando n.2: progetti strategici di ricerca e sviluppo delle MPMI) (budget: 200.000,00 €).
- From June 1 2018 member of workgroup of research project ARONA (Navigazione Chirurgica Assistita da Robotica Avanzata) on Robot-Assisted Surgical Navigation, coordinator: MASMEC SpA (Modugno, Italy), PNR 2015 - 2020" (budget: 350.000,00 €).
- Co-organiser of Summer School "Rehabilitation and Assistive Technologies based on Soft Robotics" (2019), funded by IEEE-RAS (budget: 25.000,00 $).
- (2017-2019) Research project *"*Sviluppo e validazione di una piattaforma robotica per la riabilitazione motoria e il coordinamento visuomotorio degli arti superiori con scenari di realtà virtuale relativi ad attività di vita quotidiana*"*, research grant funded by INAIL ((Italian Workers Compensation Authority), https://www.inail.it/cs/internet/attivita/prevenzione-e-sicurezza/agevolazioni-e-finanziamenti/finanziamenti-per-la-ricerca/bando-bric-2016.html
- (2014-2017) Research project *"RF-2011-02346770 Clinical and healthcare strategies for improving quality of life in persons affected by spinal cord injuries: Tuscany regional network and use of innovative technological devices"*, research grant funded by Italian Ministry of Health.
- (2014-2016) Task force "Telemonitoring of ventilator-dependent patients" (TF-2013-10), funded by the European Respiratory Society (ERS).
- (2013-2015) Research project *"ASSO - Un Ambiente eHealth integrato a Supporto della continuità di cura, a SostegnO di un completo risk management ed a favore dell'empowerment del paziente"*, research grant funded by Regione Toscana (Bando Unico POR-CReO 2012 - linea B), Coordinator: Dedalus SpA, Partners: Esaote SpA., Project Srl, Data Pos Srl, Humanware Srl, Scuola Superiore Sant'Anna, Università degli Studi di Siena - Dipartimento di Ingegneria dell'Informazione, Università degli Studi di Firenze - Dipartimento di Elettronica e Telecomunicazioni, , e-SPres3D, PlaNet Srl Sistemi Informatici, Università di Pisa - Dipartimento Cardio Toracico e Vascolare e Dipartimento di Oncologia, dei Trapianti e delle Nuove Tecnologie in Medicina.

- (2013-2015) Research project on *"Progettazione, sviluppo, validazione e sperimentazione clinica di un dispositivo robotico per la per la verticalizzazione e la mobilità di persone con disabilità motorie gravi"*, research grant funded by Centro di Riabilitazione Motoria INAIL Volterra (Italian Workers Compensation Authority - Motor Rehabilitation Centre Volterra, Italy).
- (2010-2013) Research project *"TECTUM - Sviluppo e applicazione di tecnologie per la televalutazione, la comunicazione alternativa e l'automazione ambientale di pazienti con disabilità gravi e gravissime"*, research grant funded by Regione Toscana (P.O.R. Toscana Competitività regionale e occupazione 2007-2013), Scientific coordinator: Scuola Superiore Sant'Anna; Partners: Rehabilitation Centre "Auxilium Vitae" Volterra, Italy, Humanware Srl, Pisa, Italy.
- (2011-2012) Research project *"ECHORD - The European Clearing House for Open Robotics Development"*, experiment *"Human-Robot Object Interaction" (HUROBIN)*, research grant funded by the European Commission within the 7th Framework Programme, Scientific coordinator: Scuola Superiore Sant'Anna; Partner: Humanware Srl, Italy.
- (2010-2012) Research project *"Telerehabilitation and Robotics"*, research grant funded by Regione Toscana (Regional Health Research Program 2009), Scientific coordinator: Rehabilitation Centre "Auxilium Vitae" Volterra, Italy; Partner: Scuola Superiore Sant'Anna.
- (2009-2011) Research project *"Tecnologie Innovative a supporto del Percorso Riabilitativo"*, research grant funded by Regione Toscana (Direzione Generale Diritto alla Salute e Politiche di Solidarietà), Scientific coordinator: Scuola Superiore Sant'Anna; Partner: Rehabilitation Centre "Auxilium Vitae" Volterra, Italy.

TEACHING ACTIVITIES (2003-2020)

Courses at University of Pisa, Italy

- *Lecturer:*
  - Course of *"Rehabilitation Robotics"*, PhD course in BioRobotics, Scuola Superiore Sant'Anna, Pisa, Italy (3 credits) (from academic year 2015/2016 to present).
  - Course of *"Robot companions for assisted living"*, M.Sc. in Bionics Engineering, University of Pisa, Italy (6 credits) (from academic year 2015/2016 to present).
  - Course of *"Biomechanics of locomotion system"*, Specialization School in Physical Medicine and Rehabilitation, University of Pisa, Italy (from academic year 2015/2016 to present).
  - Course of *"Rehabilitation Bioengineering"*, Specialization School in Physical Medicine and Rehabilitation, University of Pisa, Italy (from academic years 2009/2010 to present).
  - Master *"Digital life & Smart Living"*, developed by TELECOM Italia and academics at the Institute of Biorobotics, the Institute of Management, The Institute of Communication, Information and Perception Technologies (TeCIP), research and teaching departments within Scuola Superiore Sant'Anna (academic year 2015/2016).
  - Master *"Smart Solutions - Smart Communities" (SSSC)*, developed by TELECOM Italia and academics at the Institute of Biorobotics, the Institute of Management, The Institute of Communication, Information and Perception Technologies (TeCIP), research and teaching departments within Scuola Superiore Sant'Anna (academic year 2014/2015).
  - Course of *"Bioengineering applied to prostheses"*, Occupational Therapy, University of Pisa, Italy (academic years 2009/2010, 2010/2011).
  - Course of *"Bioengineering applied to Virtual Reality"* , Occupational Therapy, University of Pisa, Italy (academic years 2009/2010, 2010/2011).
  - Course of *"Fundamentals of Social Statistics"*, Occupational Therapy, University of Pisa, Italy (academic years 2004/2005, 2005/2006, 2006/2007, 2007/2008, 2008/2009).
- *Support to the courses of:*
  - *"Principles of Bionics"*, MS in Bionics Engineering, University of Pisa, Italy (academic year 2015/2016): lectures on "Biological locomotion and bioinspired locomotion".

- *"Medical Robotics"*, MS in Biomedical Engineering, University of Pisa, Italy (academic year 2015/2016): lectures on "Fundaments of robotics, interaction control schemes, compliance control, impedance control".
- *"Rehabilitation Bioengineering"*, MS in Biomedical Engineering, University of Pisa, Italy (academic years 2003/2004, 2004/2005, 2005/2006, 2006/2007, 2007/2008, 2008/2009, 2009/2010, 2010/2011, 2011/2012, 2012/2013, 2013/2014, 2014/2015, 2015/2016): lectures on "Fundaments of robotics, interaction control schemes, compliance control, impedance control", "Robotic systems for rehabilitation", "Clinical protocols in robot-assisted therapy" and "Functional assessment scales".
- *"Robotic Perception"*, MS in Computer Science, University of Pisa, Italy (academic year 2008/2009): lecture on "Fundamentals of control of robotic systems".

Courses at other Universities

- Lectures on "Motor impairment assessment scales", in the Course of *"Rehabilitation Bioengineering" (SSD ING-IND/34)* (held by Prof. E. Guglielmelli), Biomedical Engineering, Campus Biomedico University, Roma., Italy (academic year 2003/2004).
- *"Prevention of home accidents"* (Formazione Consiglieri per la sicurezza domestica, corso di formazione FSE – Ob.3 – C-C4-a2), Electronics and Automation Department, Faculty of Engineering, University of Ancona, Italy (academic year 2002/2003).

Other courses

- *"Attualità e prospettive della Robotica in riabilitazione" ("State of the art and views of Rehabilitation Robotics")* (ECM credits) – Professional course to healthcare professionals, Italian Workers Compensation Authority (Corso di Formazione INAIL), October 28-29 2014, SIAF (Scuola Internazionale di Alta Formazione), Volterra, Italy (academic year 2014/2015).
- *"School for expert in Assisitive Technologies"* (ECM credits) - January-May 2008, SIAF (Scuola Internazionale di Alta Formazione), Volterra, Italy (academic year 2007/2008). Teaching contents management in collaboration with CSR – Commissione Studi e Ricerche per persone disabili, Confindustria Federvarie and "Auxilium Vitae" Rehabilitation Centre Volterra, Italy.
- *"Movement biomechanics and vehicles ergonomics"*, Professional course Piaggio S.p.A. engineers, Polo Sant'Anna Valdera, Pontedera, Pisa, Italy (academic year 2003/2004).

ACADEMIC RESPONSIBILITIES (2006-2020)

- Member of the Academic Senate of Scuola Superiore Sant'Anna, since May 3, 2019.
- Scholar in Industrial Bioengineering (Cultore della materia in Bioingegneria Industriale - SSD ING-IND/34) (academic year 2010/2011 – to date).
- Member of teachers panel of the PhD course in BioRobotics at Scuola Superiore Sant'Anna (May 2015 up to now);
- Member of evaluation commission for admission to MSc in Bionics Engineering (April 2017);
- Member of graduation committees at University of Pisa, Italy, MS in Biomedical Engineering and BS in Occupational Therapy.
- Tutoring and supervision of PhD students:
  - Ali Leylavi Shoushtari, PhD course in BioRobotics, Scuola Superiore Sant'Anna (2014-2017);
  - Vi Do Tran, PhD course in BioRobotics, Scuola Superiore Sant'Anna (2015-2018);
  - Angela Sorriento, PhD course in BioRobotics, Scuola Superiore Sant'Anna (2017-2020);
- Tutoring and supervision of undergraduate students:
  - *"Design, development and validation of an innovative scenario for robot-assisted upper limb rehabilitation based on motor and cognitive functions"*, MS in Bionics Engineering, candidate: Silvia Campagnini, academic year 2018/2019.

- *"Analysis, development and validation of innovative dynamical parameters for quantitative assessment of effects of upper limb rehabilitation in stroke patients by means of portable end-effector robotic device"*, MS in Biomedical Engineering, candidate: Gabriella Armenia, academic year 2017/2018.
- *"Analysis, development and validation of a novel method for assessment of muscular fatigue and motor performance of person with incomplete spinal cord injury based on wearable inertial sensors and electromyographic signals"*, MS in Biomedical Engineering, candidate: Lorenzo Radi, academic year 2017/2018.
- *"Analysis of ankle joint kinematics and kinetics for injuries prevention in sports application and validation of a novel performance index"*, MS in Biomedical Engineering, candidate: Giacomo Di Raimondo, academic year 2017/2018.
- *"Development of a method for mechanical characterization of an external fixator for orthopedic surgery-precision orthopedic rehabilitation applicaations"*, Fatima Omar Ahmed Ba Fakih (Biomedical Engineering, Khalifa University, United Arab Emirates), 27/06/2017-11/08/2017.
- *"Biomechanical modeling and sensorization of the bone-external fixator for precision orthopedic surgery-precision orthopedic rehabilitation approach"*, Dong Gao, Zhiyuan He (Department of Mechanical Engineering, Tianjin University, China), period: 11/01/2017-24/02/2017.
- *"Integrated therapy by using robot-assisted training and functional electrical stimulation for gait rehabilitation"*, Leonardo Paul Miliàn (Laboratory of Biomechanics and Robotics, Pontificia Universidad Católica del Perú), period: 01/04/2016-01/10/2016.
- *"Development and validation of an innovative method for gait analysis using inertial wearable sensors"*, MS in Biomedical Engineering (Industrial curriculum), candidate: Simona Catalano, academic year 2015/2016.
- *"Analysis of the effects of functional electrical stimulation on persons with spinal cord injury and experimental setup for assessing muscular fatigue"*, MS in Biomedical Engineering (Industrial curriculum), candidate: Giulia Giantini, academic year 2014/2015.
- *"Integrated analysis of EMG and kinematic data using the Lokomat system in persons with spinal cord injuries"*, MS in Biomedical Engineering (Industrial curriculum), candidate: Elena Battini, academic year 2013/2014.
- *"Occupational implications following robot-assisted rehabilitation using the Lokomat system in persons with spinal cord injuries"*, BS in Occupational Therapy, candidate: Alessandra Deste, academic year 2012/2013.
- *"Analysis of the effects of robotic therapy in the motor recovery of spinal cord injured subjects: role of Occupational therapy in the integrated rehabilitation process"*, BS in Occupational Therapy, candidate: Cristian Iacomini, academic year 2009/2010.
- *"Experimental study of motor control strategies in post-stroke patients using a robotic system for the upper limb rehabilitation"*, MS in Biomedical Engineering (Industrial curriculum), candidate: Sandra Bagagli, academic year 2009/2010.
- *"Experimental study of interaction in Spinal Cord Injured patients using a robotic system for the lower limb rehabilitation and EMG recording system"*, MS in Biomedical Engineering (Industrial curriculum), candidate: Elisa Boldrini, academic year 2009/2010.
- *"Development of human-robot interface for a rehabilitation robotic system"*, MS in Biomedical Engineering (Industrial curriculum), candidate: Martina Marcone, academic year 2009/2010.
- *"Analysis of the Modified Barthel Index for assessing the effects of the upper limb rehabilitation therapy using a robotic system in subjects affected by hemiparesis due to ischemic post-stroke"*, BS in Occupational Therapy, candidate: Irene Perini, academic year 2008/2009.
- *"Analysis of the integrated approach of a robotic system for the upper limb rehabilitation and occupational therapy treatments in hemiparetic subjects"*, BS in Occupational Therapy, candidate: Luisa Di Cesare, academic year 2008/2009.

- *"Analysis and use of assistive technologies for occupational therapy in subjects affected by a neurological impairment"*, BS in Occupational Therapy, candidate: Rebecca Leonelli, academic year 2008/2009.
- *"Analisys and study of an innovative method for upper limb assessment"*, MS in Biomedical Engineering (Industrial curriculum), candidate: Martina Coscia, academic year 2007/2008.
- *"Development of a method for the analysis of electromyographic signal recorded during clinical experimental trials using a robotic system for lower limb rehabilitation",* Bachelor degree in Biomedical Engineering (Industrial curriculum), candidate: Mariano Troncone, academic year 2006/2007.
- *"Analisys of an innovative method for functional assessment of a robot-mediated upper limb rehabilitation"*, BS in Biomedical Engineering (Industrial curriculum), candidate: Dario Martelli, academic year 2006/2007.

- Tutoring and supervision of graduate students attending Master:

  "Robotics Devices for Neurorehabilitation", Final work for the degree of Master of Science in Mechatronic and Robotics, Scuola Superiore Sant'Anna, Pisa, candidate: Gao Xiangbo, academic year 2006/2007.

- Tutoring and supervision of graduate students in Medicine and Surgery, specializing in Physical Medicine and Rehabilitation:

  "Transcranial Direct Current Stimulation and robotic rehabilitation in the upper limb motor rececovery of subacute stroke patients - Stimolazione transcranica a corrente diretta e riabilitazione robotica nel recupero motorio dell'arto superiore in pazienti post-ictus", candidate: Laura Iardella, academic year 2012/2013.

SCIENTIFIC RESPONSIBILITIES (2002-2020)

Scientific Committees

- Co-chair of the IEEE-RAS Technical Committee on "Assistive & Rehabilitation Robotics", since Spring 2012 to date.
- Associated Editor, 2019 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2019), November 4 - 8, 2019, Macau, China.
- Associated Editor, 2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2020), October 25-29, 2020, Las Vegas, USA.
- Member of the Scientific Committee, 2nd edition of European Robotic Rehabilitation Summer School, Santo Stefano Rehabilitation Hospital, Porto Potenza Picena, Italy, 13-18 May 2019, https://er2school.com/
- Program co-chair, International Conference on NeuroRehabilitation 2018 (ICNR 2018), Pisa, October 16-20, 2018.
- Associated Editor for Rehabilitation and Assistive Devices - Neuro robotics, 7th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob 2018), August 26-29, 2018, Enschede, The Netherlands.
- Associated Editor, 2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2018), October 1-5, 2018, Madrid, Spain.
- Coordinator of the Special Section on "Robotics, technologies for rehabilitation and tele-rehabilitation", Italian Society of Neurological Rehabilitation (SIRN, Società Italiana Riabilitazione Neurologica), since 2016 to date.
- Member of the Cochrane Physical and Rehabilitation Medicine, since September 2016.
- Member of the Scientific Secretariat, IEEE-EMBS Technical Committee on "BioRobotics", since June 2015 to date.
- Member of the Scientific and Technological Committee of "Auxilium Vitae" Rehabilitation Centre (Volterra, Italy), since 2009 to December 2016.
- Member of the Scientific and Technological Committee of "Fondazione Volterra Ricerche" (Volterra Research Foundation), since December 2016 to date.

- Member of the Committee for Research and Innovation, Pisa Local Healthcare Unit (Azienda USL5 Pisa, Italy), since February 2015 to date.
- Member of the Scientific Committee of the "Rehabilitation Bioengineering Laboratory" - joint research laboratory between Scuola Superiore Sant'Anna and "Auxilium Vitae" Rehabilitation Centre (Volterra, Italy), since January 2011 to date: http://www.auxiliumvitae.it/uk/research/laboratory.php
- Member of the Program Committee of 2020 International Conference on Intelligent Computing (ICIC 2020) (October 2-5, 2020, Bari, Italy), http://ic-ic.tongji.edu.cn/2020/index.htm
- Member of Scientific Committee of 4th Internation workshop "NeuroSpine - Regeneration & Rehabilitation in Brain and Spinal Cord Injuries: from cells to Bioengineering and Neuroinformatics applications", June 28, 2019, Rehabilitation Sciences Institute, University of Toronto (Canada).
- Member of the International Scientific Committe, Human-Machine Interaction Summer School (HMISS) 2017, September 18 - 23 2017, Maratea (Italy), http://beta.hmiss.it/committee/
- Member of the Scientific Programme Committee, Workshop "Difficult discharge of complex patients" ("La dimissione difficile del paziente complesso"), November 28, 2015, Volterra (Italy).
- Member of the Scientific Programme Committee, Workshop "Biomedical technologies in pulmonary rehabilitation: challenges for research in clinical and telemonitoring applications", November 27, 2015, Volterra (Italy).
- Member of the Scientific Programme Committee, V Workshop "NeuroInformatica, Neuroimaging, NeuroRobotica, NeuroRiabilitazione, NeuroRigenerazione", September 30 2015, Milano (Italy).
- Member of the International Committee, TeleMediCare 2015, Tele-Medicine & Tele-Care for elderly and disability People, October, 1-2, 2015 Desio - Milan (Italy).
- Member of the Scientific Programme Committee, 14th edition of the IEEE/RAS-EMBS International Conference on Rehabilitation Robotics (ICORR 2015), Singapore, 11 – 14 August 2015, http://www.icorr2015.enabling-technology-festival.org/committees/scientific-programme-committee
- Exhibition and Special Events Chair, 4th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics (BIOROB 2012), Rome, 24-28 June 2012.

International Scientific Journals

- Member of Editorial Board, International Journal of Advanced Robotic Systems (Topic: Medical Robotics) - 2013 Impact Factor: 0.497, 5-Year Impact Factor: 0.579:
  http://www.intechopen.com/journals/articles/international_journal_of_advanced_robotic_systems/83/all/1
- Member of Editorial Board, Intelligent Service Robotics (ISR) Journal (Springer):
  http://www.springer.com/engineering/robotics/journal/11370/PSE?detailsPage=editorialBoard
- Member of Editorial Board, Annals of Robotics and Automation:
  https://www.peertechz.com/journals/annals-of-robotics-and-automation/editorial-board
- Guest Editor, Special Issue on "Affordable Rehabilitation and Assistive Robots and Technologies for Low Resource Settings in Developed and Developing Countries", Journal of Rehabilitation and Assistive Technologies Engineering (RATE) (publication date: August 2016);
- Reviewer for IEEE Transactions on Robotics, IEEE Transactions on Mechatronics, IEEE Transactions on Neural Systems and Neurorehabilitation, Medical Engineering and Physics, Presence: Teleoperators and Virtual Environments, Biomedical Engineering: Applications, Basis and Communications, International Journal of Social Robotics, Journal of Neuroengineering and Rehabilitation, Medical & Biological Engineering & Computing,

NeuroRehabilitation, Journal of Clinical Trials, International Journal of Advanced Robotic Systems, Robotica, Robotics and Autonomous Systems, BMC Neurology, Transactions on Biomedical Engineering, Games for Health Journal, Agence Nationale de la Recherche - France, CO-operation in Science and Technology (COST) Association.

- Reviewer for NASA Solicitation and Proposal Integrated Review and Evaluation System (NS PIRES), Experimental Program to Stimulate Competitive Research (EPSCoR), 2017;
- Reviewer for the Athene Young Investigator Programme 2017, Technische Universität Darmstadt (Germany), 2017.

Conferences and other scientific events

- Co-organizer of the Workshop "Affordable rehabilitation and assistive robotics for low resource settings and developing Countries", 14th IEEE/RAS-EMBS International Conference on Rehabilitation Robotics (ICORR 2015), Nanyang Technological University, Singapore, August 11 2015, http://www.icorr2015.enabling-technology-festival.org/
- Co-organizer of the Workshop "Novel patient-robot interfaces and multimodal interaction in Rehabilitation Robotics", IEEE RO-MAN '14 - The 23rd IEEE International Symposium on Robot and Human Interactive Communication, Edinburgh, Scotland, UK, August 25 2014, http://sssa.bioroboticsinstitute.it/events/Novel_patient-robot_Edinburgh_29Aug
- Co-organizer of the Workshop "Robotics for neuro-rehabilitation: paradigm change for a real technological and clinical breakthrough?", 5th IEEE/RAS-EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob 2014), São Paulo, Brasil, August 12-15 2014, http://www.biorob2014.org/Tutorials-and-workshops.html
- Member of the Local Organizing Committee, Workshop "Patient-ventilator interaction: clinical relevance and challenges for clinical research", Volterra, Italy, September 26 2013, https://www.dgmp.eu/svezzamento2013/Workshop.pdf
- Member of the Local Organizing Committee, Congress on "Care and management of difficult-to-wean patients", Volterra, Italy, September 27 2013, https://www.dgmp.eu/svezzamento2013/Programma.pdf
- Organizer of the Workshop "Robotics for neuro-rehabilitation: strategies to increasing impact on clinical and industrial field", 13th International Conference on Rehabilitation Robotics (ICORR 2013), Seattle, WA, USA, June 26 2013, http://depts.washington.edu/uwconf/icorr2013/neuro_rehabilitation.html
- Co-organizer of the Workshop "Robotics for neuro-rehabilitation: challenges for improving impact on clinical practice", 4th IEEE International Conference on Biomedical Robotics and Biomechatronics (BioRob 2012), Rome, June 24 2012.
- Co-organizer of the Workshop "Control problems in mechanical ventilators", 4th IEEE International Conference on Biomedical Robotics and Biomechatronics (BioRob 2012), Rome, June 24 2012.
- Member of the Organizing Committee, Workshop "Robotics for rehabilitation: current impact on clinical practice and challenges for improving quality of life" (European Robotics Week, November 28 – December 4 2011), Volterra, Italy, December 2, 2011, http://www-arts.sssup.it/tiki/tiki-index.php?page=European+Robotics+Week+2011+Robotics+for+Rehabilitation
- Member of the Local Organizing Committee "1st National Congress on Bioengineering", Pisa, Italy, July 3-5 2008.
- Member of the Local Organizing Committee "1st IEEE/RAS-EMBS International Conference on Biomedical Robotics and Biomechatronics", Pisa, Italy, February 20-22 2006.
- Member of the Local Organizing Committee "1st IEEE/IFRR Summer School on Human-Robot Interaction", Volterra, , Italy, July 19-23 2004.

Responsibilities on research projects and other initiatives

- Team Leader of the research project "RF-2011-02346770 Clinical and healthcare strategies for improving quality of life in persons affected by spinal cord injuries: Tuscany regional network and use of innovative technological devices", research grant funded by Italian Ministry of Health, 2014-2017.
- ICT expert of the task force "Telemonitoring of ventilator-dependent patients", (TF-2013-10), funded by the European Respiratory Society (ERS), 2013-2015.
- Team Leader of the project "*ASSO - Un Ambiente eHealth integrato a Supporto della continuità di cura, a SostegnO di un completo risk management ed a favore dell'empowerment del paziente*", research grant funded by Regione Toscana (Bando Unico POR-CReO 2012 - linea B), 2013-2015.
- Project Leader of the project "Progettazione, sviluppo, validazione e sperimentazione clinica di un dispositivo robotico per la per la verticalizzazione e la mobilità di persone con disabilità motorie gravi", research grant funded by Centro di Riabilitazione Motoria INAIL Volterra (Italian Workers Compensation Authority - Motor Rehabilitation Centre Volterra, Italy), 2013-2015.
- Project Leader of the project "TECTUM - Sviluppo e applicazione di tecnologie per la televalutazione, la comunicazione alternativa e l'automazione ambientale di pazienti con disabilità gravi e gravissime", funded by Regione Toscana (P.O.R. Toscana Competitività regionale e occupazione 2007-2013), 2010-2013.
- Project Leader of the project EU-FP7 ECHORD – experiment "HUROBIN - Human-robot interaction", 2011-2012.
- Project Leader of the research project "Innovative Technologies supporting the rehabilitation process" ("Tecnologie Innovative a supporto del Percorso Riabilitativo"), funded by Regione Toscana, aimed at developing and validating innovative technologies for the rehabilitation process, 2009-2011.
- Project Leader of the research project "Telerehabilitation and Robotics" ("Teleriabilitazione e Robotica"), research grant funded by Regione Toscana (Regional Health Research Program 2009), aimed at developing innovative technologies for telerehabilitation services and validating healthcare models, 2010-2012.
- Scientific and startup coordination of the "Rehabilitation Bioengineering Laboratory" (www.auxiliumvitae.it/it/ricerca/laboratorio.php), joint research laboratory between Scuola Superiore Sant'Anna and "Auxilium Vitae" Rehabilitation Centre (Volterra, Italy), 2009-2010.
- Project Leader of the research project "Telerehabilitation" (Teleriabilitazione), funded by Fondazione Cassa di Risparmio di Volterra, Italy, aimed at developing and validating clinical protocols for telerehabilitation in neurological, respiratory and cardiac fields, 2008-2010.
- Team leader of the research staff of the EU-FP6, IST-eHealth research projct "ALLADIN" (Natural Language based decision support in neurorehabilitation, project N. 507424), aimed at the development of (i) a decision support in neurorehabilitation, based on natural language and (ii) a mechatronic platform for force/torque in isometric exercises, 2003-2007.
- Member of the research team of the research project "Observatory on Technologies for Rehabilitation Bioengineering" ("Osservatorio sulle Tecnologie per la Bioingegneria della Riabilitazione") project, Research Centre on Rehabilitation Technologies (Centro RTR), joint research activities between INAIL (The Workers Compensation National Authority) and Scuola Superiore Sant'Anna, 2002-2003.

PATENTS

[1] "Dispositivo robotico per la verticalizzazione di persone con gravi disabilità" (Robotic device for verticalisation of persons affected by severe disabilities), inventors: Stefano Mazzoleni, Paolo Dario, Stefano Roccella, Fabio Leoni, Elisa Taglione, Fabio Catitti – Italian patent office, priority n. 102016000050120 - submission date: May 16 2016. Patent obtained on November 16, 2018.

On the same invention following international extension by means of PCT procedure, patent filing was submitted on November 15, 2018.

[2] "Sistema esoscheletrico modulare" (Modular exoskeleton system), inventors: Andrea Scoglio, Giovanni Cappiello, Stefano Mazzoleni, Alessandro Ridolfi, Benedetto Allotta, Jonathan Gelli, Lorenzo Bartalucci, Matteo Bianchi, Nicola Secciani, Andrea Della Valle – Italian paten office, priority n. 102020000001738 – submission date: January 29 2020.

SCIENTIFIC SOCIETIES (2002-2020)

- Member of the IEEE Robotics and Automation Society (IEEE RAS).
- Member of the IEEE Engineering in Medicine and Biology Society (EMBS).
- Member of the IEEE Brain Community
- Member of the Italian Robotics NeuroRehabilitation Group (IRNRG).

ASSOCIATIONS & ORGANIZATIONS (2002-2020)

- Co-founding member and Management Board member of ARTIM (Associazione per la Ricerca e Trattamenti Innovativi per le Mielolesioni - Association for Research and Innovative Treatments for Spinal Cord Injuries), no-profit organization (November 2013).
- Co-founding member of ICan Robotics, spinoff company of Campus Biomedico University, Rome (September 2014), http://main.icanrobotics.com/
- Member of Fastenica Srl, spinoff company of Scuola Superiore Sant'Anna, Pisa (October 2015), http://www.fastenica.it/

LECTURES AND TALKS

[1] *"Robotics for the upper limb rehabilitation"*, talk at the workshop "Rehabilitation in the upper limb traumatology", Istituto Prosperius Tiberino, Umbertide (Perugia), Italy, June 17, 2006.

[2] *"Biorobotic systems for the improvement of life quality in elderly and disabled subjects"*, talk at workshop "Recovery processes in rehabilitation", Filippo Turati Foundation, Gavinana (Pistoia), Italy, October 27-28, 2006.

[3] *"Biorobotic systems for longevity"*, talk at workshop "New technogies in neuro-rehabilitation", Fondazione S. Maugeri, Pavia, Italy, November 14, 2006.

[4] *"Assessment of motor performance: from clinical scales to advanced biomechanical models"*, talk at workshop "Robotic technologies for rehabilitation", 2007 IEEE International Conference on Robotics and Automation, Roma, Italy, April 10-14, 2007.

[5] *"Biorobotic systems for the rehabilitation and the functional assessment of disabled people"*, talk at the National Conference on "Disability and sporting activities", Pisa, Italy, June 15-16, 2007.

[6] *"Biorobotic systems for motor rehabilitation and functional assessment of disabled subjects"*, Seminar on ENABLE (Enhancing human ability for employability) project, Pisa, Italy, September 26, 2007.

[7] *"Rehabilitation robotics for rehabilitation"*, talk at the Conference "Innovative Technologies in Cognitive and Neuromotor Psychology", Firenze, Italy, January 24, 2008.

[8] *"Technologies for motor function restoration"*, talk at the workshop "Future clinical perspectives of Gerontechnology", 6th International Conference of the International Society for Gerontechnology, Pisa, Italy, June 2-4, 2008.

[9] *"Aspects of technology, safety and effectiveness in robotics"*, talk at the 2nd National Congress of Italian Society of Rehabilitation (S.I.Ria), Firenze, Italy, October 2-4, 2008.

[10] *"The assessment of the upper limb using robotic systems"*, talk at the Training Course "The evaluation of effectiveness and measurement's systems in rehabilitation", Volterra, Italy, May 22-23, 2009.

[11] *"Upper limb motor learning and motor recovery after a neurological damage using a robotic system"*, talk at the Italy-Japan International Seminar "Musculoskeletal System and Computational Neuroscience for Rehabilitation", Milano and Genova, Italy, June 15-18, 2009.

[12] *"Upper limb spasticity reduction following active training: an experience using robotic systems"*, talk at the workshop on "Upper limb robotic neurorehabilitation", Genova, Italy, December 14-15, 2009.

[13] *"Design criteria and prospectives for wearable robotic systems for neurorehabilitation and functional support"*, talk at the workshop on "Upper limb robotic neurorehabilitation", Genova, Italy, December 14-15, 2009.

[14] *"Robotics and rehabilitation: new prospectives"*, talk at the XXII Fondazione Mariani Care Training Course on "Neuroradiology, neurophysiology and neurogenetics: new diagnostic and therapeutic tools in pediatric neurological disorders", Genova, Italy, March 24-26, 2010.

[15] *"Research activities on telemonitoring and telerehabilitation"*, talk at the Workshop on "Telecare in Medicine", Firenze, Italy, April 8-10, 2010.

[16] *"Research on Telematic Medicine: projects on Telerehabilitation, Telemonitoring and Robotics at Scuola Superiore Sant'Anna in Pisa"*, talk at the Workshop "La medicina telematica per la disabilità è una realtà: chi, dove e quando", Bologna, Italy, May 27, 2010.

[17] *"The functional assessment using isometric measurements: the ALLADIN system"*, talk at the Workshop "La riabilitazione dello stroke…oggi", Massa Pisana, Italy, June 11, 2010.

[18] *"Research activities on Telerehabilitation, Telemonitoring and Robotics at Scuola Superiore Sant'Anna in Pisa"*, talk at the 6th National Congress of the Interdisciplinary Italian Medical Society Promed Galileo, Pisa, Italy, November 6, 2010.

[19] *"Advanced assistive technologies and assistive technologies for communications"*, talk at the workshop "Occupational Therapy in the Integrated Care for the Disabled Person" (La Terapia Occupazionale nell'Assistenza Integrata alla Persona Disabile), Volterra, Italy, November 25, 2010.

[20] *""Telerehabilitation and Robotics" research project"*, workshop "Robotics for rehabilitation: current impact on clinical practice and challenges for improving quality of life" (European Robotics Week, 28 novembre- 4 dicembre 2011), Volterra, Italy, December 2, 2011.

[21] *"Research activities in Rehabilitation Robotics and Telerehabilitation: experiences and prospectives of the joint laboratory between Scuola Superiore Sant'Anna in Pisa and "Auxilium Vitae" Rehabilitation Centre in Volterra"*, University Campus Bio-Medico, Roma, Italy, February 21, 2012.

[22] *"Robotics for rehabilitation and technologies for telerehabilitation: current status and prospectives for improving quality of life of patients"*, talk at workshop "Japan Days - Robotic experience in Italy and Japan", Pisa, Italy, May 11, 2012.

[23] *"Control problems in mechanical ventilators"*, talk at workshop "Robotics for neuro-rehabilitation: challenges for improving impact on clinical practice", 4th IEEE/RAS-EMBS International Conference on Biomedical and Biomechatronics, Roma, Italy, June 24, 2012.

[24] *"Upper limb motor learning and motor recovery after a neurological damage using a robotic system"*, talk at workshop "Robotics for neuro-rehabilitation: challenges for improving impact on clinical practice", 4th IEEE/RAS-EMBS International Conference on Biomedical and Biomechatronics, Roma, Italy, June 24, 2012.

[25] *"Robotics for Neurorehabilitation: impact on the clinical practice and development's perspectives"*, talk at workshop "Update in rehabilitation robotics", European Robotics Week 2012, Roma, Italy, November 29, 2012.

[26] *"Growth prospects and limits of rehabilitation robotics"*, talk at the National Training Course on "Technologies for promoting activity and participation", Italian Society Physical Medicine and Rehabilitation (SIMFER), Prato, Italy, March 1, 2013.

[27] *"State of the art of Robotics for rehabilitation"*, talk at the Training Course on "Robotics in Neurorehabilitation", Crotone, Italy, April 27, 2013.

[28] *"Stroke rehabilitation using Robotics"*, talk at the Training Course on "Ictus: un percorso multispecialistico per la valutazione e la riabilitazione per la cura del paziente anziano", Nottola, Italy, May 4, 2013.

[29] *"Robot-assisted gait training in Parkinson's disease: a State-of-the-Art and challenges for improving the quality of life"*, talk at the workshop "The G-EO system and the effects of

robot-assisted in gait recovery in patients with Parkinson's Disease & Parkinsonism", 5th International Neurorehabilitation Symposium, Zurich, Switzerland, September 11, 2013.

[30] *"Innovative technologies for telemonitoring of ventilator-dependent patients. State of the art, impact and challenges for improving quality of life"*, talk at the workshop "Patient-ventilator interaction: clinical relevance and challenges for clinical research, Volterra, Italy, September 26 2013.

[31] *"Technology",* talk at the Congress on "Care and management of difficult-to-wean patients", Volterra, Italy, September 27 2013.

[32] *"Robot-assisted rehabilitation: State-of-the-Art and challenges for improving the quality of life of disables persons"*, talk at the tutorial "Robotic Surgery: State of the Art and Research Opportunities", 16th IEEE International Conference on Advanced Robotics, Montevideo, Uruguay, November 25, 2013.

[33] *"Robot-assisted locomotion training experimental setup and integration with diagnostic and therapeutic systems"*, talk at the Congress "Update on robot-assisted gait rehabilitation", S. Gerardo Hospital, Monza, Italy, February 21, 2014.

[34] *"An integrated eHealth environment supporting care continuity, risk management and patient empowerment"*, talk at the workshop "State of the art from FP7 projects and their relation to Horizon 2020, and the EU Robotics Topic Groups", European Robotics Forum 2014, Rovereto, Italy, March 14, 2014.

[35] *"Update in Gait Robotic Rehabilitation in people with Spinal Cord Injury"*, talk at the 8th World Congress for Neurorehabilitation, Istanbul, April 8-12, 2014.

[36] *"Clinical assessment for robot therapy stroke patients: a common language for physicians, therapists and researchers"*, talk at the 8th World Congress for Neurorehabilitation, Istanbul, April 8-12, 2014.

[37] *"Robot-assisted upper limb rehabilitation: mechanisms of motor recovery in chronic and subacute stroke patients",* talk at the workshop "Haptics in Rehabilitation, Prosthetics and Neural Engineering: Robotic Aspects and Neuro-scientific Principles", EuroHaptics 2014, Paris, June 27, 2014.

[38] *"A set of kinematic parameters as performance metrics for assessing motor recovery in stroke patients during upper limb robot-assisted therapy",* talk at the 7th International Workshop on Human-Friendly Robotics, Pontedera, Italy, October 23, 2014.

[39] *"Research and technological innovation in healthcare system: Rehabilitation Robotics and Bioengineering",* 2nd meeting of local healthcare unit (Azienda USL5 Pisa) management, Pisa, Italy, October 30, 2014.

[40] *"Robotics and bioengineering for rehabilitation"*, talk at the workshop, "Rehabilitation processes for criticall-ill patients: clinical, organizational and research issues", Volterra, Italy, December 6 2014.

[41] *"Rehabilitation robotics: ongoing experimental clinical trials and research projects"*, Annual meeting of the Italian Robotics NeuroRehabilitation Group (IRNRG), Milano, Italy, May 8 2015.

[42] *"Robotics and technologies for rehabilitation",* talk at the workshop "Robotics, Virtual Reality and Telerehabilitation: novel applications in rehabilitation", Carrara, Italy, June 4 2015.

[43] *"Affordable rehabilitation robotics and telemedicine"*, talk at the workshop "Affordable rehabilitation and assistive robotics for low resource settings and developing Countries", 14th IEEE/RAS-EMBS International Conference on Rehabilitation Robotics (ICORR 2015), Nanyang Technological University, Singapore, August 11 2015.

[44] *"Assessment metrics for robot-assisted rehabilitation"*, talk at the workshop "Human-Oriented Approaches for Assistive and Rehabilitation Robotics", 14th IEEE/RAS-EMBS International Conference on Rehabilitation Robotics (ICORR 2015), Nanyang Technological University, Singapore, August 11 2015.

[45] *"La BioRobotica per la riabilitazione e l'assistenza: dalla ricerca alla pratica clinica"*, talk at convegno "Robotica e Riabilitazione", September 25 2015, Istituto Agazzi Arezzo, Italy.

[46] *"The robot, the patient and the therapist": interactions and new alliances for rehabilitation"*, talk at the workshop "The status of research on spinal cord injuries", Marina di Carrara, Italy, October 10 2015.

[47] *"Robots for rehabilitation"*, talk at the workshop "Robots for the gait recovery: the experience of Spinal Cord Injury Centre at Pisa University Hospital", Viareggio, Italy, October 30 2015.

[48] *"Clinical monitoring: technical perspectives"*, talk at the workshop "Biomedical technologies for pulmonary rehabilitation: challenges for clinical research and telemonitoring applications", Volterra, Italy, November 27, 2015.
[49] *"Clinical monitoring: technical perspectives"*, talk at the congress "Difficult discharge of complex patients", Volterra, Italy, November 28, 2015.
[50] *"Sensors for clinical monitoring: from research to clinical practice",* talk at the Training Course on "La formazione del personale per il progetto CCM e BPCO tra ospedale e territorio"*,* Cardiovascular and Thoracic Department, Pisa University Hospital, Italy, December 18 2015.
[51] *"Robotics for gait rehabilitation: from research to clinical practice",* talk at the workshop "Gait rehabilitation and robotic systems for gait recovery", Pisa University Hospital, Italy, June 15, 2016.
[52] *"Robotics and biomedical technologies for ehealth applications in rehabilitation",* talk at the workshop "Smart Hospital 2.0", Firenze University Hospital, Italy, June 23, 2016.
[53] *"Robotic systems in rehabilitation: clinical use and effects on balance",* talk at the workshop *"Aspetti innovativi nella terapia, assistenza e riabilitazione dei disturbi dell'equilibrio"*, San Pellegrino Terme, Italy, September 24, 2016.
[54] *"ICT, Robotics and Rehabilitation",* talk at the workshop *"TeleMediCare 2016"*, Desio, Italy, October 3, 2016.
[55] *"Robotics and biomedical technologies for ehealth applications in rehabilitation",* talk at the workshop "Robotics technologies in rehabilitation", 44th Congress of Italian Society of Physical Medicine and Rehabilitation (SIMFER), Bari, Italy, October 23, 2016.
[56] *"Robotics and technologies for upper limb rehabilitation",* talk at the 1st European Robotic Rehabilitation Summer School, Porto Potenza Picena, Italy, June 7, 2017.
[57] *"Sistemi biorobotici e tecnologie per la riabilitazione e l'invecchiamento attivo",* 7a ed. Medit Health Innovation, Organizzazione Sanitaria e Living Technology al Servizio del Paziente Anziano, Convegno SIGG Veneto Trentino Alto Adige, Vicenza, 18 novembre 2017.
[58] *"Ventilatory response to exercise of elite soccer players and quantitative assessment of professional boxers performances",* Italy-Japan workshop 2017 on "Robotics and Sport Science*,* Waseda University, Tokyo, 8 dicembre 2017.
[59] *"Robot-assisted upper limb and gait therapy in rehabilitation setting: current evidence, combined approaches, clinical and bioengineering challenges,* PMR Rehabilitation Research Grand Rounds, Penn Institute for Rehabilitation Medicine, University of Pennsylvania, March 21, 2018.
[60] *"Robotics and Bioengineering for upper limb and gait rehabilitation: from research to clinical practice,* General Robotics, Automation, Sensing & Perception Lab, University of Pennsylvania, USA, March 23, 2018.
[61] *"Robot-assisted upper limb and gait rehabilitation treatments: clinical and bioengineering challenges,* Children's National Medical Centre, Washington DC, March 26, 2018.
[62] *"Robotics for upper limb and gait rehabilitation: current evidence, combined approaches, clinical and bioengineering challenges,* Department of Mechanical Engineering, Columbia University, USA, March 30, 2018.
[63] *"Robotica e neuroriabilitazione: dalle protesi ai sensori di interface",* XVIII Congresso Nazionale Società Italiana Riabilitazione Neurologica (SIRN), Trieste, Italy, April 7 2018.
[64] *"Human-Machine Hybridization: Robots, Cyborg and AI",* Summer School in Bioethics 2018 - Human Enhancement: Bioethical Challenges of Emerging Technologies, Roma, Italy, July 10 2018.
[65] *"La robotica al servizio dell'uomo: dalle applicazioni industriali alla vita quotidiana,* Rotary Pisa, Italy, 26 settembre 2018.
[66] *"Progetti congiunti nella ricerca scientifica e trasferimento tecnologico nell'ambito della Biorobotica", Investimenti e innovazioni: opportunità di collaborazione Italia-EAU,* Ambasciata EAU, Roma, Italy, October 22 2018.
[67] *"L'interazione uomo-macchina: possono robot e intelligenza artificiale contribuire a migliorare la nostra qualità di vita, in particolare, la qualità di vita di persone con disabilità?",* II Corso di Perfezionamento in Neurobioetica e Roboetica, Ateneo Pontificio Regina Apostolorum, Roma, Italy, October 26 2018.

[68] *"La robotica e le tecnologie per la riabilitazione delle persone con lesione midollare",* Convegno "Riabilitazione robotica del cammino per persone con lesione midollare: ricerca scientifica ed esperienze cliniche", Pisa, Italy, November 5 2018.

[69] *"Parametri cinematici e metriche di valutazione funzionale per la riabilitazione robotica dell'arto superiore in pazienti post-ictus in fase subacuta e cronica",* Convegno "La riabilitazione robotica dell'arto superiore: esperienze a confronto", Fondazione Don Gnocchi, Centro "S. Maria alla Pineta", Marina di Massa, Italy, November 16 2018.

[70] *"Impresa 4.0, lavoro, sostenibilità, robotica",* Forum per i problemi della pace e della guerra, Circolo Le Vie Nuove, Firenze, Italy, December 7 2018.

[71] *"Robotics for Rehabilitation, Biomechanics and Technologies in Sports Medicine: scientific and technological opportunities and challenges",* IMT Lucca, Italy, March 28 2019.

[72] *"Technological innovation in Rehabilitation: current status, opportunities and challenges for improving quality of life of persons with disabilities",* 2nd European Robotic Rehabilitation Summer School, Porto Potenza Picena, Italy, May 15 2019.

[73] *"International and interprofessional networking to develop common standards for research and innovation: cooperation between medical and technical competences",* 2nd European Robotic Rehabilitation Summer School, Porto Potenza Picena, Italy, May 15 2019.

[74] *"Robotics and technologies for Rehabilitation and Sports Medicine", Politecnico di Bari, May 21 2019.*

[75] *"Robotics and technologies supporting upper limb rehabilitation process",* Workshop "Nuove Tecnologie e umanizzazione delle cure nella neuroriabilitazione in età evolutiva e nell'adulto: un binomio possibile", Centro Cardinal Ferrari, Fontanellato, Italy, June 6 2019.

[76] *"Le tecnologie e la robotica per la riabilitazione dell'arto superiore",* Convegno "Tecnologie Innovative a sostegno della fragilità e disabilità", Istituto Superiore di Sanità, Roma, Italy, June 7 2019.

[77] *"La robotica nell'arto superiore",* Workshop "Aspetti innovativi nella terapia, assistenza e riabilitazione nelle malattie neurologiche", San Pellegrino Terme, Italy, September 21 2019.

[78] *"Sistemi bioroboticie tecnologie per la riabilitazione neurologica: dalla ricerca alla pratica clinica",* Workhop "TECNOTOG - La tecnologia applicata alla riabilitazione neurologica del bambino, Milano, Italy, October 5 2019.

[79] *"La robotica tra passato e futuro nella vita quotidiana",* Bergamo Scienza Festival, San Pellegrino Terme, Italy, October 12 2019.

[80] *"Robotica per l'arto superiore: assessment e riabilitazione",* 50th National Congress of Italian Society of Neurology (SIN), Bologna, Italy, October 14 2019.

[81] *"Upper limb robot-assisted treatments: scientific research, clinical practice and technological challenges",* Workshop "Robotics in rehabilitation: main challenges for a tailored treatment", 1st Italian Conference of Robotics and Intelligent Machines (I-RIM 3D), Roma, Italy, October 19 2019.

[82] *"I sistemi robotici per la riabilitazione e l'assistenza",* "Workshop "La disabilità del terzo millennio", Reggio Emilia, Italy, November 30 2019.

[83] *"Robot-assisted treatments for neurorehabilitation: assessment metrics and integration among technologies",* Workshop "Rehabilitation: a future challenge of Robotics", IRCCS San Raffaele Pisana, Roma, Italy, December 9 2019.

[84] *"La robotica e le tecnologie per la riabilitazione e l'assistenza: dalla ricerca alla pratica clinica",* Workshop "ICT – Information and Communication Technology, privacy e tutela dei dati in sanità - Innovazioni in Medicina, Intelligenza Artificiale, Robotica", Cortina d'Ampezzo, Italy, February 15 2020.

STEFANO MAZZOLENI

Complete list of publications (2003-2020)

International Journals with peer review

[1] E.L. Santarcangelo, E. Cavallaro, S. Mazzoleni, E. Marano, B. Ghelarducci, P. Dario, S. Micera, L. Sebastiani, "Kinematic strategies for lowering of upper limbs during suggestions of heaviness: a real-simulator design", *Exp Brain Res* 2005; 162:35-45

[2] S. Mazzoleni, S. Aliboni, G. Pierini, G. Rossi, B. Cesqui, F. Posteraro, S. Micera, M.C. Carrozza, P. Dario, "An innovative robot-mediated therapy for the upper limb of elderly chronic hemiparetic subjects", *Gerontechnology* 2008;7(2): 162

[3] G. Turchetti, B. Labella, S. Bellelli, S. Cannizzo, I. Palla, S. Mazzoleni, S. Petroni, S. Sterzi, E. Guglielmelli, "Innovation in rehabilitation technology: technological opportunities and socioeconomic implications – a theoretical model", *Int. J. of Healthcare Technology and Management* 2009; 10(4/5): 245 – 261

[4] S. Mazzoleni, A. Toth, M. Munih, J. Van Vaerenbergh, G. Cavallo, S. Micera, P. Dario, E. Guglielmelli, "Whole-body isometric force/torque measurements for functional assessment in neuro-rehabilitation: platform design, development and verification", *Journal of NeuroEngineering and Rehabilitation* 2009; 6:38

[5] F. Posteraro, S. Mazzoleni, S. Aliboni, B. Cesqui, A. Battaglia, P. Dario, S. Micera, "Robot-mediated therapy for paretic upper limb of chronic patients following neurological injury", *Journal of Rehabilitation Medicine* 2009 Nov;41(12):976-80

[6] S. Petroni, S. Bellelli, S. Cannizzo, I. Palla, S. Mazzoleni, B. Labella, S. Sterzi, E. Guglielmelli, G. Turchetti, "Early assessment of neuro – rehabilitation technology: a case study", *Int J Biomed Eng Technol* 2010; 4(3):232 – 244

[7] P. Soda, S. Mazzoleni, G. Cavallo, E. Guglielmelli, G. Iannello, "Human movement onset detection from isometric force\torque measurements via a supervised pattern recognition approach", *Artificial Intelligence in Medicine* 2010; 50(1):55-61

[8] F. Posteraro, S. Mazzoleni, S. Aliboni, B. Cesqui, A. Battaglia, M. C. Carrozza, P. Dario, S. Micera, "Upper limb spasticity reduction following active training: a robot-mediated study in chronic hemiparetic patients", *Journal of Rehabilitation Medicine* 2010; 42(3):279-281

[9] S. Mazzoleni, F. Posteraro, F. Forte, S. Micera, P. Dario, M. C. Carrozza, "Biomechanical assessment of reaching movements in post-stroke patients during a robot-aided rehabilitation", *Applied Bionics and Biomechanics* 2011; 8(1):39-54

[10] S. Mazzoleni, J. Van Vaerenbergh, E. Stokes, G. Fazekas, P. Dario, E. Guglielmelli, "An ergonomic modular foot platform for isometric force/torque measurements in poststroke functional assessment: a pilot study", *J Rehabil Res Dev.* 2012; 49(6):949–60. http://dx.doi.org/10.1682/JRRD.2011.03.0059

[11] S. Mazzoleni, M. Munih, J. Cinkelj, A. Toth, M. Jurak, J. Van Vaerenbergh, G. Cavallo, P. Soda, P. Dario, E. Guglielmelli, "Whole-body isometric force\torque measurements for functional assessment in neuro-rehabilitation: graphical user interface and data pre-processing techniques", *Computer Methods and Programs in Biomedicine* 2013; 110(1):27–37, doi:10.1016/j.cmpb.2012.10.017

[12] R.T. Scaramuzzo, M. Ciantelli, I. Baldoli, L. Bellanti, M. Gentile, F. Cecchi, E. Sigali, S. Tognarelli, P. Ghirri, S. Mazzoleni, A. Menciassi, A. Cuttano, A. Boldrini, C. Laschi, P. Dario, "MEchatronic REspiratory System SImulator for Neonatal Applications (MERESSINA) project: a novel bioengineering goal", *Medical devices: evidence and research* 2013; 6: 115-121

[13] S. Mazzoleni, P. Sale, M. Franceschini, S. Bigazzi, M.C. Carrozza, P.Dario, F. Posteraro, "Effects of proximal and distal robot-assisted upper limb rehabilitation on chronic stroke recovery", *NeuroRehabilitation* 2013 Jan 1;33(1):33-9, doi:10.3233/NRE-130925

[14] G. Vagheggini, S. Mazzoleni, N. Ambrosino, "Tele-assistance in pulmonary diseases: current status and open issues", *Shortness of Breath* 2013; 2(2):80-83. ISSN 2281-6550 (online)

[15] G. Vagheggini, S. Mazzoleni, E. Vlad Panait, P. Navalesi, N. Ambrosino, "Physiologic response to various levels of pressure support and NAVA in prolonged weaning", *Respiratory Medicine* 2013; 107:1748-1754, doi:10.1016/j.rmed.2013.08.013

[16] S. Mazzoleni, P. Sale, M. Tiboni, M. Franceschini, M.C. Carrozza, F. Posteraro, "Upper limb robot-assisted therapy in chronic and subacute stroke patients: a kinematic analysis", *American Journal of Physical Medicine & Rehabilitation* 2013 Oct;92(10 Suppl 1):e26-37, doi:10.1097/PHM.0b013e3182a1e852

[17] C. Geroin, S. Mazzoleni, N. Smania, M. Gandolfi, D. Bonaiuti, G. Gasperini, D. Munari, P. Sale, A. Waldner, R. Spidalieri, F. Bovolenta, A. Picelli, F. Posteraro, F. Molteni, M. Franceschini, "Systematic review of outcome measures of walking training using electromechanical and robotic devices in patients with stroke", *J Rehabil Med.* 2013 Oct;45(10):987-96, doi:10.2340/16501977-1234

[18] S. Mazzoleni, L. Puzzolante, L. Zollo, P. Dario, F. Posteraro, "Mechanisms of motor recovery in chronic and subacute stroke patients following a robot-aided training", *IEEE Transactions on Haptics* April-June 2014; 7(2):175-180, doi:10.1109/TOH.2013.73

[19] S. Mazzoleni, G. Turchetti, I. Palla, F. Posteraro, P. Dario, "Acceptability of robotic technology in neuro-rehabilitation: preliminary results on chronic stroke patients", *Computer Methods and Programs in Biomedicine* 2014; 116(2):116–122, doi:10.1016/j.cmpb.2013.12.017

[20] A. Di Paco, G.A. Catapano, G. Vagheggini, S. Mazzoleni, M.L. Micheli, N. Ambrosino, "Ventilatory response to exercise of elite soccer players", *Multidisciplinary Respiratory Medicine* 2014; 9:20, doi:10.1186/2049-6958-9-20

[21] P. Sale, S. Mazzoleni, V. Lombardi, D. Galafate, M.P. Massimiani, F. Posteraro, C. Damiani, M. Franceschini, "Recovery of hand function with robot-assisted therapy in acute stroke patients: a randomized controlled trial", *International Journal of Rehabilitation Research* 2014 Sep; 37(3):236-42, doi: 10.1097/MRR.0000000000000059

[22] P. Sale, M. Franceschini, S. Mazzoleni, E. Palma, M. Agosti, F. Posteraro, "Effects of upper limb robot-assisted therapy on motor recovery in subacute stroke patients", *Journal of NeuroEngineering and Rehabilitation* 2014; 11:104, doi:10.1186/1743-0003-11-104

[23] S. Mazzoleni, G. Montagnani, G. Vagheggini, L. Buono, F. Moretti, P. Dario, N. Ambrosino, "Interactive videogame as rehabilitation tool of patients with chronic respiratory diseases: preliminary results of a feasibility study", *Respiratory Medicine* 2014; 108(10):1516–1524, doi:10.1016/j.rmed.2014.07.004

[24] G. Vagheggini, E. Panait Vlad, S. Mazzoleni, U. Bortolotti, F. Guarracino, N. Ambrosino, "Outcome of difficult-to wean subjects after cardiac surgery", *Respiratory Care* 2015; 60(1):56-62

[25] E. Papaleo, L. Zollo, N. Garcia-Aracil, F. J. Badesa, R. Morales, S. Mazzoleni, S. Sterzi, E. Guglielmelli, "Upper-limb kinematic reconstruction during stroke robot-aided therapy", *Medical & Biological Engineering & Computing*, September 2015; 53(9):815-828

[26] G. Turchetti, S. Mazzoleni, P. Dario, D. Saldì, E. Guglielmelli, "The impact of robotic technology on neuro-Rehabilitation: preliminary results on acceptability and effectiveness", *Value Health*. 2015 Nov; 18(7):A363-4, doi: 10.1016/j.jval.2015.09.712

[27] A. Leylavi Shoushtari, S. Mazzoleni, P. Dario, "Bio-inspired kinematical control of redundant robotic manipulators", *Assembly Automation* 2016; 36(2):200 - 215, doi: 10.1108/AA-11-2015-116

[28] G. Stampacchia, A. Gerini, S. Mazzoleni, "Effects of severe spasticity treatment with intratechal Baclofen in Multiple Sclerosis patients: long term follow-up", *NeuroRehabilitation* 2016 Apr 6; 38(4):385-393, doi: 10.3233/NRE-161329

[29] N. Ambrosino, G. Vagheggini, S. Mazzoleni, M. Vitacca, "Telemedicine in chronic obstructive pulmonary disease", Breathe 2016; 12(4): 350-356, doi: 10.1183/20734735.014616

[30] A. Leylavi Shoushtari, P. Dario, S. Mazzoleni, "A Review on the Evolvement Trend of Robotic Interaction Control", *Industrial Robot* 2016, 43(5):535 - 551, doi: 10.1108/IR-02-2016-0073

[31] G. Stampacchia, A. Rustici, S. Bigazzi, A. Gerini, T. Tombini, S. Mazzoleni, "Walking with a powered robotic exoskeleton: subjective experience, spasticity and pain in Spinal Cord Injured persons", *NeuroRehabilitation* 2016; 39(2):277-283, doi: 10.3233/NRE-161358

[32] C. Shirota, J. Jansa, J. Diaz, S. Balasubramanian, S. Mazzoleni, N.A. Borghese, A. Melendez-Calderon, "On the assessment of coordination between upper extremities: towards a common language between rehabilitation engineers, clinicians and neuroscientists", *Journal of NeuroEngineering and Rehabilitation* 2016; 13:80, doi: 10.1186/s12984-016-0186-x

[33] S. Crea, M. Cempini, S. Mazzoleni, M.C. Carrozza, F. Posteraro, N. Vitiello, "Phase-II clinical validation of a powered exoskeleton for the treatment of elbow spasticity", *Frontiers in Neuroscience* 2017, 11:261, doi: 10.3389/fnins.2017.00261

[34] S. Mazzoleni, A. Focacci, M. Franceschini, A. Waldner, C. Spagnuolo, E. Battini, D. Bonaiuti, "Robot-assisted end-effector-based gait training in chronic stroke patients: a multicentric uncontrolled observational retrospective clinical study", *NeuroRehabilitation* 2017; 40(4): 483-492, doi: 10.3233/NRE-161435

[35] C. Duret, S. Mazzoleni, "Upper limb robotics applied to neurorehabilitation: An overview of clinical practice", *NeuroRehabilitation* 2017; 41(1):5-15, doi: 10.3233/NRE-171452

[36] S. Mazzoleni, C. Duret, A.G. Grosmaire, E. Battini, "Combining upper limb robotic rehabilitation with other therapeutic approaches after stroke: current status, rationale and challenges" *BioMed Research International*, vol. 2017 (2017), Article ID 8905637, doi: 10.1155/2017/8905637

[37] F. Posteraro, S. Crea, S. Mazzoleni, M. Berteanu, I. Ciobanu, N. Vitiello, M. Cempini, S. Gervasio, N. Mrachacz-Kersting, "Technologically-advanced assessment of upper-limb spasticity: a pilot study", *European Journal of Physical and Rehabilitation Medicine* 2017 Sep 4. doi: 10.23736/S1973-9087.17.04815-8

[38] S. Mazzoleni, E. Battini, R. Crecchi, P. Dario, F. Posteraro, "Upper limb robot-assisted therapy in subacute and chronic stroke patients using an innovative end-effector haptic device: a pilot study", *NeuroRehabilitation* 2018; 42(1):43-52, doi: 10.3233/NRE-172166

[39] V.D. Tran, P. Dario, S. Mazzoleni, "Kinematic measures for upper limb robot-assisted therapy following stroke and correlations with clinical outcome measures: a review", *Medical Engineering and Physics* 2018; 53:13-31, doi: 10.1016/j.medengphy.2017.12.005

[40] S. Mazzoleni, V.D. Tran, P. Dario, F. Posteraro, "Wrist robot-assisted rehabilitation treatment in subacute and chronic stroke patients: from distal to proximal motor recovery", *IEEE Transactions on Neural Systems & Rehabilitation Engineering* 2018; 26(9): 1889 – 1896, doi: 10.1109/TNSRE.2018.2864935

[41] M. Gandolfi, N. Valè, E.K. Dimitrova, S. Mazzoleni, E. Battini, M.D. Benedetti, A. Gajofatto, F. Ferraro, M. Castelli, M. Camin, M. Filippetti, C. De Paoli, E. Chemello, A. Picelli, J. Corradi, A. Waldner, L. Saltuari, N. Smania, "Effects of high-intensity robot-assisted hand training on upper limb recovery and muscle activity in individuals with Multiple Sclerosis: a randomized, controlled, single-blinded trial", *Frontiers in Neurology* 2018; 9:905, doi: 10.3389/fneur.2018.00905

[42] S. Mazzoleni, E. Battini, M. Galgani, M. Tenucci, P. Dario, G. Calvosa, "Motion tracking for quantitative and qualitative assessment of upper limb movements following acromioclavicular joint ligament reconstruction: a pilot study", The Open Biomedical Engineering Journal 2018, 12:135-146, doi: 10.2174/1874120701812010135

[43] G. Stampacchia, A. Massone, A. Gerini, E. Battini, S. Mazzoleni, "Reliability of the Italian version of the International Spinal Cord Injury Pain Basic Data Set", *Spinal Cord* 2019; Feb;57(2):128-133, doi: 10.1038/s41393-018-0171-2

[44] S. Mazzoleni, V.D Tran, P. Dario, F. Posteraro, "Effects of transcranial direct current stimulation (tDCS) combined with wrist robot-assisted rehabilitation on motor recovery in subacute stroke patients: a randomized controlled trial", *IEEE Transactions on Neural Systems & Rehabilitation Engineering* 2019; 27(7):1458-1466, doi: 10.1109/TNSRE.2019.2920576

[45] S. Mazzoleni, E. Battini, D. Buongiorno, D. Giansanti, M. Grigioni, G. Maccioni, F. Posteraro, F. Draicchio, V. Bevilacqua, "Design and development of a robotic platform based on virtual

reality scenarios and wearable sensors for upper limb rehabilitation and visuomotor coordination". In: Huang DS., Huang ZK., Hussain A. (eds) Intelligent Computing Methodologies. ICIC 2019. *Lecture Notes in Computer Science*, vol 11645. Springer, Cham, pages 704-715, doi: 10.1007/978-3-030-26766-7_64

[46] M. Gandolfi, N. Valè, E.K. Dimitrova, M. Filippetti, S. Mazzoleni, E. Battini, A. Picelli, A. Santamato, M. Gravina, L. Saltuari, N. Smania, "Robot-assisted upper limb training combined with Botulinum toxin injection in the treatment of upper limb spasticity: a randomised single-blinded controlled trial", *Frontiers in Neurology* 2019; 31;10:41. doi: 10.3389/fneur.2019.00041

[47] E. Ancona, A. Quarenghi, R. Saggini, M. Simonini, S. Mazzoleni, A. De Tanti, D. Savoia, G.P. Salvi, "Effect of verticalisation with ERIGO® in the acute rehabilitation of severe acquired brain injury", *Neurological Sciences* 2019; 40:2073–2080, doi: 10.1007/s10072-019-03917-0

[48] M. Goffredo, S. Mazzoleni, A. Gison, F. Infarinato, S. Pournajaf, D. Galafate, F. Posteraro, M. Franceschini, M. Agosti, "Kinematic parameters for tracking patient progress during upper limb robot-assisted rehabilitation: an observational study on subacute stroke subjects", Applied Bionics and Biomechanics, Volume 2019, Article ID 4251089, doi: 10.1155/2019/4251089

[49] P. Boldrini, D. Bonaiuti, S. Mazzoleni, F. Posteraro, "Rehabilitation assisted by robotic and electromechanical devices for persons with neurological disabilities: An Italian consensus conference", *Functional Neurology* 2019; 34(2): 123-124

[50] A. Sorriento, M.B. Porfido, S. Mazzoleni, G. Calvosa, M. Tenucci, G. Ciuti, P. Dario, "Optical and electromagnetic tracking systems for biomedical applications: a critical review on potentialities and limitations", *IEEE Reviews in Biomedical Engineering* 2020; 13: 212-232, doi: 10.1109/RBME.2019.2939091

[51] M. Franceschini, S. Mazzoleni, M. Goffredo, S. Pournajaf, D. Galafate, S. Criscuolo, M. Agosti, F. Posteraro, "Upper limb robot-assisted rehabilitation versus physical therapy on subacute stroke patients: a follow-up study", *Journal of Bodywork and Movement Therapies* 2020; 24(1): 194-198, doi: 10.1016/j.jbmt.2019.03.016

[52] N. Valè, M. Gandolfi, S. Mazzoleni, E. Battini, E.K. Dimitrova, M.D. Benedetti, A. Gajofatto, F. Ferraro, M. Castelli, M. Camin, M. Filipetti, C. Depaoli, A. Picelli, J. Corradi, E. Chemello, A. Waldner, L. Saltuari, N. Smania, "Characterization of upper limb impairments at body function, activity and participation in persons with Multiple Sclerosis by behavioral and EMG assessment: a cross-sectional study", *Frontiers in Neurology* 2019; 10:1395, doi: 10.3389/fneur.2019.01395

[53] G. Stampacchia, M. Olivieri, A. Rustici, C. D'Avino, A. Gerini, S. Mazzoleni, "Gait rehabilitation in persons with Spinal Cord Injury using innovative technologies: an observational study", *Spinal Cord* (in press)

Contributions in book

[54] S. Mazzoleni, J. Van Vaerenbergh, A. Toth, M. Munih, E. Guglielmelli, P. Dario, "The ALLADIN diagnostic device: an innovative platform for assessing post-stroke functional recovery", in "Rehabilitation Robotics", Sashi S Kommu (Ed.), ISBN 978-3-902613-04-2, InTech, August 2007, pp. 535-554.

[55] S. Mazzoleni, P. Dario, M. C. Carrozza, E. Guglielmelli, "Application of robotic and mechatronic systems to neurorehabilitation", in "Mechatronic Systems Applications", Annalisa Milella, Donato Di Paola and Grazia Cicirelli (Eds.), ISBN 978-953-307-040-7, InTech, March 2010, pp. 99-116.

[56] S. Mazzoleni, P. Dario, M. C. Carrozza, "Robotics and rehabilitation: new perspectives", in New Diagnostic and Therapeutic Tools in Child Neurology, Mariani Foundation Paediatric Neurology Series - XXIV, Eugenio Mercuri, Ermellina Fedrizzi and Giovanni Cioni (Eds.), ISBN 978-2-7420-0813-1; ISSN 0969-0301, John Libbey Eurotext Ltd, August 2011, pp. 121-138.

[57] S. Mazzoleni, “Sistemi robotici e meccatronici per la riabilitazione” (Robotic and mechatronic system for rehabilitation), in “Manuale sulla Disabilità. Dai bisogni educativi speciali ai programmi di integrazione scolastica” (Handbook of Disability. From to special educational needs to school integration programmes), Collana Medico-psico-pedagogica, Giovanna Lo Sapio (Ed.), ISBN 978-88-6677-156-2, Armando Editore, 2012, pp. 216-236.

[58] S. Mazzoleni, P. Sale, M. Tiboni, M. Franceschini, F. Posteraro, M.C. Carrozza, Upper limb robot-assisted therapy in chronic and subacute stroke patients: a kinematic analysis, in “Converging Clinical and Engineering Research on Neurorehabilitation” Part I, J.L. Pons, Diego Torricelli and Marta Pajaro (Eds.), Springer-Verlag Berlin Heidelberg 2013, pp.129-133 (DOI: 10.1007/978-3-642-34546-3_21).

[59] S. Mazzoleni, “Lo stato dell’arte della robotica in riabilitazione” (State of the art of rehabilitation robotics), in “La robotica in neuroriabilitazione” (Robotics in neurorehabilitation), L. Lucca, L. Pignolo, S. Mazzoleni (Eds.), ISBN: 978-88-299-2742-5, Piccin Editore, 2016, pp. 39-64

[60] S. Mazzoleni, “Scale di valutazione per il recupero dell’arto inferiore e del cammino nella riabilitazione robotica” (Assessment scales for lower limb and gait recovery in rehabilitation robotics), in “La robotica in neuroriabilitazione” (Robotics in neurorehabilitation), L. Lucca, L. Pignolo, S. Mazzoleni (Eds.), ISBN: 978-88-299-2742-5, Piccin Editore, 2016, pp. 155-169

[61] F. B. Fakih, C. Stefanini, P. Dario, S. Mazzoleni, “Instrumentation of an external fixator for force and bone healing process monitoring” in “Intelligent Human Systems Integration”, W. Karwowski and T. Ahram (eds.), Advances in Intelligent Systems and Computing 722, https://doi.org/10.1007/978-3-319-73888-8_71, Springer International Publishing AG, 2018, pp. 456-461.

[62] S. Mazzoleni, E. Battini, R. Crecchi, F. Posteraro F. (2019) “Timing of Motor Recovery in Subacute and Chronic Stroke Patients During Upper Limb Robot-Assisted Rehabilitation” In: Masia L., Micera S., Akay M., Pons J. (eds) Converging Clinical and Engineering Research on Neurorehabilitation III. ICNR 2018. Biosystems & Biorobotics, vol 21. Springer, Cham, doi: 10.1007/978-3-030-01845-0_38

[63] S. Mazzoleni, E. Battini, A. Rustici, G. Stampacchia (2019) “An Overground Robotic Exoskeleton Gait Training in Complete Spinal Cord Injured Patients” In: Masia L., Micera S., Akay M., Pons J. (eds) Converging Clinical and Engineering Research on Neurorehabilitation III. ICNR 2018. Biosystems & Biorobotics, vol 21. Springer, Cham, doi: 10.1007/978-3-030-01845-0_100

[64] S. Mazzoleni, V.D.Tran, G. Ciuti, Z. Song, P. Dario (2019) “A Biomechanical Model of the Shoulder Including Acromioclavicular Joint Ligaments: Preliminary Results” In: Masia L., Micera S., Akay M., Pons J. (eds) Converging Clinical and Engineering Research on Neurorehabilitation III. ICNR 2018. Biosystems & Biorobotics, vol 21. Springer, Cham, doi: 10.1007/978-3-030-01845-0_128

[65] S. Mazzoleni, V.D.Tran, L. Iardella, E. Falchi, P. Dario, F. Posteraro (2019) “Transcranial Direct Current Stimulation and Wrist Robot-Assisted Integrated Treatment on Subacute Stroke Patients: A Randomized, Sham-Controlled Trial” In: Masia L., Micera S., Akay M., Pons J. (eds) Converging Clinical and Engineering Research on Neurorehabilitation III. ICNR 2018. Biosystems & Biorobotics, vol 21. Springer, Cham, doi: 10.1007/978-3-030-01845-0_104

[66] M. Gandolfi, N. Valè, E. Dimitrova, S. Mazzoleni, E. Battini, M. D. Benedetti, A. Gajofatto, F. Ferraro, J. Corradi, M. Castelli, M. Camin, M. Filippetti, C. De Paoli, A. Picelli, E. Chemello, A. Waldner, N. Smania (2019) “High-Intensity Robot-Assisted Hand Training in Individuals with Multiple Sclerosis: A Randomized, Controlled, Single-Blinded Trial” In: Masia L., Micera S., Akay M., Pons J. (eds) Converging Clinical and Engineering Research on Neurorehabilitation III. ICNR 2018. Biosystems & Biorobotics, vol 21. Springer, Cham, doi: 10.1007/978-3-030-01845-0_106

Proceedings of international conferences with peer review

[67] S. Mazzoleni, E. Cavallaro, J. Carpaneto, S. Micera, P. Dario, L. Sebastiani, E. Marano, B. Ghelarducci, E. L. Santarcangelo, “On the modification of upper limb kinematic strategies due to hypnotic susceptibility”, in Proc. 19th Congress of the International Society of Biomechanics, Dunedin, New Zealand, 2003, vol. atti, pp. 1-1.

[68] S. Mazzoleni, J. Van Vaerenbergh, A. Toth, M. Munih, E. Guglielmelli, P. Dario, "ALLADIN: A novel mechatronic platform for assessing post-stroke functional recovery", in Proc. 9th IEEE International Conference on Rehabilitation Robotics, 2005, Chicago, IL, USA, pp. 156-159 (Student Travel Award).

[69] J. Van Vaerenbergh, S. Mazzoleni, A. Toth, E. Guglielmelli, M. Munih, E. Stokes, G. Fazekas, S.D. Ruijter, "Assessment of recovery at stroke patients by whole-body isometric force-torque measurements of functional tasks I: mechanical design of the device", in Proc. 3rd European Medical and Biological Engineering Conference, 2005, Prague, Czech Republic, IFMBE Proc. 2005 11(1), ISSN: 1727-1983, paper 1834.

[70] J. Cinkelj, M. Mihelj, D. Bacciu, M. Jurak, E. Guglielmelli, A. Toth, J. De Lafonteyne, J. Verschelde, S. Mazzoleni, J. Van Vaerenbergh, S. D. Ruijter, M. Munih, "Assessment of stroke patients by whole-body isometric force-torque measurements II: software design of the ALLADIN Diagnostic Device", in Proc. 3rd European Medical and Biological Engineering Conference, 2005, Prague, Czech Republic, IFMBE Proc. 2005 11(1), ISSN: 1727-1983, paper 1790.

[71] S. Mazzoleni, S. Micera, F. Romagnolo, P. Dario, E. Guglielmelli, "An ergonomic dynamometric foot platform for functional assessment in rehabilitation", in Proc. 1st IEEE/RAS-EMBS International Conference on Biomedical Robotics and Biomechatronics, 2006, Pisa, Italy, pp. 619-624.

[72] B. Cesqui, S. Micera, S. Mazzoleni, M. C. Carrozza, P. Dario, "Analysis of upper limb performance of elderly people using a mechatronic system", in Proc. 1st IEEE/RAS-EMBS International Conference on Biomedical Robotics and Biomechatronics, 2006, Pisa, Italy, pp. 365-370.

[73] S. Mazzoleni, G. Cavallo, J. Cinkelj, M. Jurak, J. Van Vaerenbergh, D. Campolo, E. Guglielmelli, P. Dario, "Towards application of a mechatronic platform for whole-body isometric force-torque measurements to functional assessment in neuro-rehabilitation", in Proc. IEEE International Conference on Robotics and Automation, 2007, Rome, Italy, pp. 1535-1540.

[74] M. C. Carrozza, C. Laschi, S. Micera, P. Dario, S. Roccella, J. Carpaneto, L. Beccai, A. Pisetta, L. Odetti, F. Vecchi, S. Mazzoleni, "Research on Rehabilitation Engineering at ARTS Lab, Scuola Superiore Sant'Anna, Pisa, Italy", in Proc. 10th IEEE International Conference on Rehabilitation Robotics, 2007, Noordwijk, The Netherlands, pp.590-600.

[75] G. Turchetti, B. Labella, S. Bellelli, S. Cannizzo, I. Palla, S. Mazzoleni, S. Petroni, S. Sterzi, E. Guglielmelli, "Innovation in rehabilitation technology: technological opportunities and socio-economic implications", in Proc. 6th International Conference on the Management of Healthcare & Medical Technology, 2007, Pisa, Italy, pp. 89-91.

[76] S. Petroni, S. Bellelli, S. Cannizzo, I. Palla, S. Mazzoleni, B. Labella, S. Sterzi, E. Guglielmelli, G. Turchetti, "Early assessment of neuro – rehabilitation technology: a case study", in Proc. 6th International Conference on the Management of Healthcare & Medical Technology, 2007, Pisa, Italy, pp.74-77.

[77] P. Soda, S. Mazzoleni, G. Cavallo, E. Guglielmelli, "A supervised pattern recognition approach for human movement onset detection", in Proc. 21th IEEE International Symposium on Computer-Based Medical Systems , 2008, Jyväskylä, Finland, pp. 566-571.

[78] B. Cesqui, S. Aliboni, S. Mazzoleni, M. C. Carrozza, F. Posteraro, S. Micera, "On the use of divergent force fields in robot-mediated neurorehabilitation", in Proc. 2nd IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics, 2008, Scottsdale, Arizona, USA, pp. 854-861.

[79] S. Mazzoleni, M. Coscia, G. Rossi, S. Aliboni, F. Posteraro, M. C. Carrozza, "Effects of an upper limb robot-mediated therapy on paretic upper limb in chronic hemiparetic subjects: a biomechanical and EEG-based approach for functional assessment", in Proc. 11th IEEE International Conference on Rehabilitation Robotics, 2009, Kyoto, Japan, pp. 92-97.

[80] S. Mazzoleni, G. Stampacchia, E. Cattin, E. Bradaschia, M. Tolaini, B. Rossi, M. C. Carrozza, "Effects of a robot-mediated locomotor training on EMG activation in healthy and SCI subjects", in Proc. 11th IEEE International Conference on Rehabilitation Robotics, 2009, Kyoto, Japan, pp. 378-382.

[81] S. Mazzoleni, E. Boldrini, G. Stampacchia, C. Laschi, B. Rossi, M. C. Carrozza, “Changes on EMG activation in healthy subjects and incomplete SCI patients following a robot-assisted locomotor training”, in Proc. International Conference on Rehabilitation Robotics 2011, Zurich, Switzerland, pp.864-869.

[82] S. Mazzoleni, M. Filippi, L. Puzzolante, E. Falchi, F. Posteraro, M. C. Carrozza, “Robot-aided therapy on the upper limb of subacute and chronic stroke patients: a biomechanical approach”, in Proc. International Conference on Rehabilitation Robotics 2011, Zurich, Switzerland, pp. 601-606.

[83] S. Mazzoleni, R. Crecchi, F. Posteraro, M.C. Carrozza, “Effects of robot-assisted wrist therapy in chronic stroke patients: a kinematic approach”, in Proc. 4th IEEE RAS/EMBS Conference on Biomedical Robotics and Biomechatronics, June 24-27 2012, Rome, pp. 1978-1982.

[84] S. Mazzoleni, G. Vagheggini, N. Ambrosino, E. Panait Vlad, M. C. Carrozza, “Comparative analysis of integrated diaphragmatic electromyography during three different modalities of mechanical ventilation (NAVA, PSV and PCV) ”, in Proc. 4th IEEE RAS/EMBS Conference on Biomedical Robotics and Biomechatronics, June 24-27 2012, Rome, pp. 1593-1595.

[85] S. Mazzoleni, G. Stampacchia, A. Gerini, T. Tombini, M. C. Carrozza, “FES-cycling training in spinal cord injured patients”, in Proc. 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC’13), July 3-7 2013, Osaka, Japan, pp. 5339-5341.

[86] S. Mazzoleni, R. Crecchi, F. Posteraro, M.C. Carrozza, “Robot-assisted upper limb rehabilitation in chronic stroke patients”, in Proc. 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC’13), July 3-7 2013, Osaka, Japan, pp. 886-889.

[87] S. Mazzoleni, P. Sale, M. Tiboni, M. Franceschini, M.C. Carrozza, F. Posteraro, “Effects of upper limb robot-assisted therapy on motor recovery of subacute stroke patients: a kinematic approach”, in Proc. 13th International Conference on Rehabilitation Robotics (ICORR), June 24-26 2013, Seattle, USA, ISBN: 978-1-4673-6023-4.

[88] S. Mazzoleni, G. Vagheggini, L. Buono, E. Panait Vlad, N. Ambrosino, P. Dario, “Diaphragmatic electromyography analysis during two different mechanical ventilation techniques in patients with neuromuscular diseases”, in Proc. 5th IEEE/RAS-EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob 2014), August 12-15, 2014, São Paulo, Brasil, pp. 87-90.

[89] S. Mazzoleni, L. Buono, P. Dario, F. Posteraro, “Upper limb robot-assisted therapy in subacute and chronic stroke patients: preliminary results on initial exposure based on kinematic measures”, in Proc. 5th IEEE/RAS-EMBS International Conference on Biomedical Robotics and Biomechatronics (BioRob 2014), August 12-15, 2014, São Paulo, Brasil, pp. 265-269.

[90] S. Mazzoleni, E. Battini, T. Tombini, G. Stampacchia, “Effects of robot-assisted locomotor training in patients with gait disorders following neurological injury: an integrated EMG and kinematic approach”, in Proc. 14th IEEE/RAS-EMBS International Conference on Rehabilitation Robotics, August 11-14, 2015, Singapore, pp. 775-779.

[91] S. Mazzoleni, L. Iardella, P. Dario, F. Posteraro, “Effects of combined transcranial direct current stimulation and wrist robot-assisted therapy in subacute stroke patients: preliminary results”, in Proc. 14th IEEE/RAS-EMBS International Conference on Rehabilitation Robotics, August 11-14, 2015, Singapore, pp. 217-222.

[92] C. Benatti Moretti, R.C.J. Thais Terranova, L.R. Battistella, S. Mazzoleni, G. Caurin, “Knowledge discovery strategy over patient performance data towards the extraction of hemiparesis-inherent features: a case study, in Proc. 6th IEEE RAS/EMBS International Conference on Biomedical Robotics and Biomechatronics, June 26-29, 2016, Singapore.

[93] P. Dario, S. Mazzoleni, G. Ciuti, T. Sun, Z. Song, J.S. Dai, S. Wang “Precision Orthopaedic Surgery and Precision Orthopaedic Rehabilitation: a Novel Integrated Approach”, in Proc. 17th Annual Meeting of the International Society for Computer Assisted Orthopaedic Surgery, Aachen (Germany), June 14–17, 2017.

[94] S. Mazzoleni, G. Ciuti, T. Sun, Z. Song, J. S. Dai, S. Wang, “An integrated scenario unifying precision orthopaedic surgery and precision orthopaedic rehabilitation”, in Proc. 31st International Congress on Computer Assisted Radiology and Surgery, Barcelona, Spain June 20 - 24, 2017, Int J CARS (2017) 12 (Suppl 1):S76.

[95] S. Mazzoleni, M. Tenucci, M. Galgani, G. Ciuti, G. Calvosa, P. Dario, "Accuracy of pedicle screw placement in spine surgery using a computer-assisted navigation system", in Proc. 31st International Congress on Computer Assisted Radiology and Surgery, Barcelona, Spain June 20 - 24, 2017, Int J CARS (2017) 12 (Suppl 1):S93-94.

[96] S. Mazzoleni, V.D. Tran, L. Iardella, P. Dario, F. Posteraro, "Randomized, sham-controlled trial based on transcranial direct current stimulation and wrist robot-assisted integrated treatment on subacute stroke patients: intermediate results", in Proc. 15th IEEE International Conference on Rehabilitation Robotics, July 17-20, 2017, London.

[97] S. Mazzoleni, E. Battini. A. Rustici, G. Stampacchia, "An integrated gait rehabilitation training based on Functional Electrical Stimulation cycling and overground robotic exoskeleton in complete spinal cord injury patients: preliminary results, in Proc. 15th IEEE International Conference on Rehabilitation Robotics, July 17-20, 2017, London.

[98] V.D. Tran, P. Dario, S. Mazzoleni, "An upper limb musculoskeletal model including acromioclavicular joint ligaments: preliminary results", in Proc. VII Meeting of the Italian Chapter of the European Society of Biomechanics (ESB-ITA 2017), Roma, September 28-29, 2017 ISBN: 978-88-6296-000-7.

[99] N Valè, M Gandolfi, E Dimitrova, S. Mazzoleni, E Battini, M.D. Benedetti, A. Gajofatto, F. Ferraro, M. Castelli, M. Camin, M. Filippetti, J. Corradi, C. De Paoli, A. Picelli, N. Smania, "Analysis of functional impairment and muscular activity with EMG of upper limb in patients with Multiple Sclerosis: a cross-sectional study", World Confederation for Physical therapy Congress Congress 2019, Geneva, Switzerland, 10-13 May 2019.

[100] V.D. Tran, M.S. Tran, P. Dario, S. Mazzoleni, "An approach of shoulder movement analysis using OpenSim software", in Proc. 2019 International Conference on System Science and Engineering (ICSSE 2019), Dong Hoi City, Vietnam, July 19-21, 2019, Article number 8823113, Pages 511-516.

[101] S. Mazzoleni, E. Battini, D. Buongiorno, D. Giansanti, M. Grigioni, G. Maccioni, F. Posteraro, F. Draicchio, V. Bevilacqua, "Design and development of a robotic platform based on virtual reality scenarios and wearable sensors for upper limb rehabilitation and visuomotor coordination", International Conference on Intelligent Computing, Nanchang, China, August 3-6, 2019.

Proceedings of other international and national conferences and workshops

[102] S. Micera, S. Mazzoleni, E. Guglielmelli, P. Dario, "Assessment of gait in elderly people using mechatronic devices: preliminary results", Gait & Posture 2003, vol. 18, Supplement 1, pp. S22.

[103] F. Posteraro, S. Micera, J. Carpaneto, S. Mazzoleni, E. Guglielmelli, A. Battaglia, P. Dario, "A biomechanical index for the evaluation of upper arm motor control in a subject affected by polyradiculoneuropathy", Gait & Posture 2003, vol. 18, Supplement 1, pp. S23.

[104] E.L. Santarcangelo, E. Cavallaro, S. Mazzoleni, E. Marano, B. Ghelarducci, P. Dario, S. Micera, L. Sebastiani, "Kinematic strategies of upper limbs lowering during suggestions of heaviness: a real-simulator design", Congress of the Italian Society of Neuroscience, Pisa, Italy, 2003, vol. atti, pp. 1-1.

[105] E.L. Santarcangelo, E. Cavallaro, S. Mazzoleni, P. Dario, B. Ghelarducci, S. Micera, L. Sebastiani, "Involontarietà del movimento: effetti dell'ipnotizzabilità e dell'ipnosi nel test di abbassamento del braccio", 11th Congress of the Italian Society of Psychophysiology, Pisa, Italy, 2003, vol. atti, pp. 28.

[106] E.L. Santarcangelo , E. Cavallaro, S. Mazzoleni, E. Marano, B. Ghelarducci, P. Dario, S. Micera, L. Sebastiani, "Kinematic strategies of upper limbs lowering during suggestions of heaviness: a real-simulator design", Journal of Psychophysiology, vol. 20, n. 2, pp. 100-100, 2006.

[107] S. Aliboni, G. Pierini, G. Rossi, S. Mazzoleni, S. Micera, B. Cesqui, F. Posteraro, "Terapia robotica e tossina botulinica nel recupero dell'arto superiore nel paziente emiplegico", VIII Congresso Nazionale Società Italiana Riabilitazione Neurologica, 2008, Montecatini, Italy.

[108] S. Mazzoleni, G. Stampacchia, E. Bradaschia, M. Tolaini, E. Cattin, P. Arrighi, S. Carozzo, M.C. Carboncini, P. Andre, M. C. Carrozza, B. Rossi, "EEG and EMG activation during lower-limb robot-mediated locomation using different task conditions", XVI Congresso Nazionale Società Italiana di Psicofisiologia, Pisa, Italy, November 27-29, 2008.

[109] S. Mazzoleni, M. Coscia, G. Rossi, S. Aliboni, A. Battaglia, F. Posteraro, M. C. Carrozza, S. Micera, P. Dario, "Effects of a robot-mediated therapy for paretic upper limb in chronic subjects following a neurological injury: a biomechanical and EEG-based approach", XVI Congresso Nazionale Società Italiana di Psicofisiologia, 2008, Pisa, Italy.

[110] S. Mazzoleni, B. Cesqui, F. Posteraro, S. Aliboni, M. C. Carrozza, S. Micera, P. Dario, "Robot-mediated therapy for paretic upper limb of chronic subjects following a neurological injury: a comparison between two approaches", in Atti Congresso Nazionale di Bioingegneria 2008 (1st National Congress on Bioengineering), Pisa, Italy, July 3-5, 2008, pp. 235-236.

[111] S. Mazzoleni, G. Stampacchia, E. Cattin, O. Lefevbre, C. Riggio, M. Troncone, E. Bradaschia, M. Tolaini, B. Rossi, M. C. Carrozza, "Effects of a robot-mediated locomotor training in healthy and spinal cord injured subjects", in Atti Congresso Nazionale di Bioingegneria 2008 (1st National Congress on Bioengineering), Pisa, Italy, July 3-5, 2008, pp. 245-246.

[112] S. Mazzoleni, G. Stampacchia, E. Cattin, E. Bradaschia, M. Tolaini, B. Rossi, M. C. Carrozza, "Effects of a robot-mediated locomotor training on EMG activation in healthy and SCI subjects", International Neurorehabilitation Symposium, Zurich, Switzerland, February 12-14, 2009.

[113] G. Stampacchia, E. Bradaschia, S. Mazzoleni, M. Tolaini, E. Cattin, B. Rossi, M. C. Carrozza, "Effects of a robot-mediated locomotor training on EMG activation in healthy and SCI subjects", 48th Annual Scientific Meeting of the International Spinal Cord Society (ISCOS), 2009, Firenze, Italy.

[114] S. Mazzoleni, M. Coscia, G. Rossi, S. Aliboni, F. Posteraro, M. C. Carrozza, "Effects of an upper limb robot-aided therapy in chronic poststroke subjects: a biomechanical and EEG-based approach for functional assessment", Convegno "Neuroriabilitazione robotica dell'arto superiore", 2009, Genova, Italy.

[115] P. Tropea, S. Mazzoleni, F. Posteraro, S. Micera, "Modificazioni delle sinergie muscolari dell'arto superiore indotte dall'emiparesi e dalla riabilitazione mediata da robot", Convegno "Neuroriabilitazione robotica dell'arto superiore", 2009, Genova, Italy.

[116] G. Stampacchia, S. Mazzoleni, E. Bradaschia, A. Gerini, B. Rossi, M. C. Carrozza, "Effetto dell'allenamento al cammino con Lokomat sul reclutamento muscolare in soggetti affetti da mielolesione incompleta", XIV Congresso Nazionale Società Medica Italiana di Paraplegia, Palermo, Italy, March 18-20, 2010.

[117] S. Mazzoleni, M.C. Carrozza, P. Dario, S. Micera, F. Posteraro, "Effects of different robot-aided approaches for the upper limb rehabilitation in neurological impaired patients", 6th World Congress on Neurorehabilitation (WCNR 2010), Vienna, Austria, March 21-25, 2010.

[118] S. Mazzoleni, R. Crecchi , M.C. Carrozza, F. Posteraro, "Assessment of the upper limb robot-aided rehabilitation in chronic hemiparetic patients: a biomechanical approach", 17th Physical and Rehabilitation Medicine European Congress, Venice, Italy, 23 - 27 May 2010.

[119] S. Mazzoleni R. Crecchi , M.C. Carrozza, F. Posteraro, "Effects of different upper limb robot-aided approaches in chronic hemiparetic patients", 17th Physical and Rehabilitation Medicine European Congress, Venice, Italy, 23 - 27 May 2010.

[120] G. Stampacchia, E. Bradaschia, A. Gerini, S. Mazzoleni, E. Cattin, B. Rossi, M. C. Carrozza, "Effects of a robot-assisted locomotor training on EMG activaction in SCI subjects", 17th Physical and Rehabilitation Medicine European Congress, Venice, Italy, 23 - 27 May 2010.

[121] S. Mazzoleni, F. Posteraro, P. Tropea, S. Micera, P. Dario, M. C. Carrozza, "Robot-aided rehabilitation in post-stroke subjects: a biomechanical method for the upper limb assessment", in Atti Congresso Nazionale di Bioingegneria 2010 (2nd National Congress on Bioengineering), Torino, Italy, July 8-10, 2010, pp. 245-246.

[122] P. Tropea, S. Mazzoleni, R. Crecchi, F. Posteraro, S. Micera, "Analysis of upper limb muscle synergies in stroke patients during robot-aided reaching and planar movements", in Atti Congresso Nazionale di Bioingegneria 2010 (2nd National Congress on Bioengineering), Torino, Italy, July 8-10, 2010, pp. 711-712.

[123] S. Mazzoleni, G. Stampacchia, E. Cattin, E. Bradaschia, B. Rossi, M. C. Carrozza, "Locomotor training of paraplegic patients using a robotic gait orthosis: preliminary results on EMG

activation", in Atti Congresso Nazionale di Bioingegneria 2010 (2nd National Congress on Bioengineering), Torino, Italy, July 8-10, 2010, pp. 247-248.

[124] S. Mazzoleni, F. Posteraro, E. Falchi, S. Micera, L. Puzzolante, P. Dario, M.C. Carrozza, "Robot-aided training in stroke subjects: a biomechanical approach for the upper limb assessment", Workshop on "Future Trend in Rehabilitation Robotics", 3rd IEEE/RAS-EMBS International Conference on Biomedical Robotics and Biomechatronics, Tokyo, Japan, September 26, 2010.

[125] S. Mazzoleni, M. Filippi, E. Falchi, L. Puzzolante, S. Micera, P. Dario, M.C. Carrozza, F. Posteraro, "Mechanisms of motor recovery in chronic vs subacute stroke patients following a robot-aided training: an experimental hypothesis", 7th World Stroke Congress, Seoul, Korea, October 13-16, 2010.

[126] P. Sale, D. Le Pera, R. Semprini, E. Palma, A. Pucello, S. Mazzoleni, M. C. Carrozza, F. Stocchi, M. Franceschini, "Robot per l'arto superiore e malattia di Parkinson. Possibile utilizzo come trattamento riabilitativo e/o sistema valutativo", XI Congresso Nazionale Società Italiana di Riabilitazione Neurologica (SIRN), Verona, Italy, May 5-7, 2011.

[127] S. Mazzoleni, R. Esposito, G. Vagheggini, G. Montagnani, N. Ambrosino, "Simulating Home Environment for Pulmonary Tele-Rehabilitation: a Proof-Of-Concept Study", in Proc. e-Government & e-Health (eGeH 2011), 8th International Conference and Exhibition, Desio, Italy, July 9-11, 2011.

[128] G. Vagheggini, S. Mazzoleni, R. Esposito, M. C. Carrozza, N. Ambrosino, "Neurally adjusted ventilatory assist (NAVA) in difficult-to wean patients", European Respiratory Society Annual Congress, Amsterdam, The Netherlands, September 24-28, 2011.

[129] S. Mazzoleni, M. Filippi, L. Puzzolante, R. Crecchi, M.C. Carrozza, F. Posteraro, "Wrist robot-aided rehabilitation as tool for biomechanical study in chronic stroke patients", 1st European Neurorehabilitation Congress (ENRC), Merano, Italy, October 20-22, 2011.

[130] G. Vaghegggini, S. Mazzoleni, R. Esposito, E. Panait Vlad, N. Ambrosino, "Confronto di tre modalità di ventilazione meccanica assistita in pazienti con difficoltoso svezzamento", XII Congresso Nazionale Unione Italiana Pneumologia (UIP)/ XLI Congresso Nazionale Associazione Italiana Pneumologi Ospedalieri (AIPO), Bologna, Italy, November 30-December 3, 2011.

[131] P. Cavicchioli, G. Vagheggini, E. Panait, S. Mazzoleni, G. Montagnani, S. Reitano, N. Ambrosino, "Free-Aspire and chest physiotherapy in bronchial hypersecretion", 13th International Conference on Home Mechanical Ventilation (JIVD)/4th European Respiratory Care Association (ERCA) Congress, Barcelona, Spain, March 15-17, 2012, Abstract book, p.90.

[132] A. Cuttano, R.T. Scaramuzzo, M. Ciantelli, M. Gentile, P. Ghirri, E. Sigali, A. Boldrini, P. Dario, A. Menciassi, C. Laschi, S. Tognarelli, F. Cecchi, S. Mazzoleni, "Mechatronic Respiratory System Simulator for Neonatal Applications (MERESSINA) ", Computer Assisted Radiology and Surgery (CARS 2012), June 27 - 30, 2012, Pisa, Italy.

[133] S. Mazzoleni, S. Bigazzi, F. Posteraro, M. C. Carrozza, "Robotic wrist rehabilitation in chronic stroke patients", in Atti Congresso Nazionale di Bioingegneria 2012 (3rd National Congress on Bioengineering), Roma, Italy, June 26-29 2012, ISBN:978 88 555 3182-5.

[134] S. Mazzoleni, M. Franceschini, M. C. Carrozza, P. Sale, "Upper limb robot-assisted therapy and assessment in Parkinson's disease: a pilot study", in Atti Congresso Nazionale di Bioingegneria 2012 (3rd National Congress on Bioengineering), Roma, Italy, June 26-29 2012, ISBN:978 88 555 3182-5.

[135] S. Mazzoleni, G. Vagheggini, E. Panait Vlad, N. Ambrosino, "Automatic identification of asynchronisms and ineffective efforts during mechanical ventilation", in Atti Congresso Nazionale di Bioingegneria 2012 (3rd National Congress on Bioengineering), Roma, Italy, June 26-29 2012, ISBN:978 88 555 3182-5.

[136] S. Mazzoleni, G. Vagheggini, F. Mezzasalma, E. Panait Vlad, G. Montagnani, N. Ambrosino, "Effetti di un trattamento riabilitativo con Wii Fit™ balance board in pazienti con patologie respiratorie croniche: studio pilota", TeleMedicine & TeleCare (TeleMediCare 2012), Desio, Italy, October 1, 2012.

[137] G. Vagheggini, S. Reitano, E. Panait Vlad, A. Di Paco, A. Zito, F. Mezzasalma, S. Mazzoleni, A. Tafi, S. Meini, N. "Ambrosino, Efficacia della riabilitazione respiratoria intensiva in soggetti post-acuti provenienti da reparti di pneumologia e medicina interna", XI Congresso regionale Federazione Associazioni Dirigenti Ospedalieri Internisti (FADOI) Toscana, Firenze, Italy, October 26-27, 2012.

[138] G. Vagheggini, E. Panait Vlad, A. Di Paco, M. Digiorgio, S. Reitano, A. Zito, F. Mezzasalma, S. Mazzoleni, N. Ambrosino, "Difficult to wean patients after cardiac and thoracic surgery: outcome results of a regional weaning center", 14° Congresso Nazionale di Aggiornamento in Rianimazione e Anestesia CardioToracoVascolare (CARACT), Lido di Camaiore, Italy, November 15-17, 2012.

[139] R.T. Scaramuzzo, A. Cuttano, M. Gentile, M. Ciantelli, E. Sigali, I. Baldoli, L. Bellanti, S. Tognarelli, F. Cecchi, S. Mazzoleni, A. Menciassi, C. Laschi, P. Dario, A. Boldrini, P. Ghirri, "La ricerca neonatologica in Toscana e Lombardia: quali contributi e con quali risorse?" La pediatria medica e chirurgica - Medical and surgical pediatrics, 2013; 35(2):67.

[140] A. Di Paco, G. Vagheggini, S. Mazzoleni, E. Panait Vlad, S. Tarantino, S. Reitano, A. Zito, D.N. Makhabah, N. Ambrosino, "Neurally adjusted ventilatory assist (NAVA) to withdraw mechanical ventilation (MV) in food borne botulism associated respiratory failure: a case report", Am J Respir Crit Care Med 2013; 187:A3036.

[141] G. Montagnani, D. Makhabah, G. Vagheggini, L. Pantani, S. Mazzoleni, F. Mezzasalma, E. Panait, N. Ambrosino, "Effectiveness of add-on interactive video games exercises in pulmonary rehabilitation programs in chronic respiratory disease patients", 2nd International Conference on Respiratory Physiotherapy, March 21-23, 2013, Genova, Italy.

[142] G. Vagheggini, S. Mazzoleni, E. Panait, M.C. Carrozza, N. Ambrosino, "NAVA and PSV ventilation in neuromuscular and COPD difficult-to-wean patients", European Respiratory Society Annual Congress, Barcelona, Spain, September 7-11, 2013.

[143] G. Montagnani, D. Makhabah, G. Vagheggini, F. Mezzasalma, S. Mazzoleni, E. Panait, F. Moretti, G. Farru, N. Ambrosino, "Effectiveness of add-on interactive video games exercises in pulmonary rehabilitation programs in chronic respiratory diseases patient", European Respiratory Society Annual Congress, Barcelona, Spain, September 7-11, 2013.

[144] G. Vagheggini, E. Panait Vlad, A. Di Paco, S. Mazzoleni, F. Guarracino, A. Zito, F. Mezzasalma, M. Digiorgio, D. Makhabah, N. Ambrosino, "Difficult to wean patients after cardiac and thoracic surgery: outcome results of a regional weaning center" European Respiratory Society Annual Congress – Barcelona, Spain, September 7-11, 2013.

[145] G. Vagheggini, S. Mazzoleni, E. Panait Vlad, S. Tarantino, M.C. Carrozza, N. Ambrosino, "NAVA and PSV ventilation in neuromuscolar and COPD difficult-to-wean patients", European Respiratory Society Annual Congress - Barcelona, Spain, September 7-11, 2013.

[146] A. Di Paco, G. A. Catapano, G. Vagheggini, S. Mazzoleni. M. Levi Micheli, N. Ambrosino, "Indicators of ventilatory response: a new approach for the athletic performance assessment in professional football players", European Respiratory Society Annual Congress, Barcelona, Spain, September 7-11, 2013.

[147] G. Stampacchia, S. Mazzoleni, "EMG recording during robot-assisted exercise as support to rehabilitation planning of SCI persons", XIV Congresso Nazionale SIAMOC (14th National Congress of Italian Society of Movement Analysis in Clinical setting), Pisa, Italy, September 26-28, 2013.

[148] F. Moretti, G. Vagheggini, G. Montagnani, S. Mazzoleni, P. Cavicchioli, L. Pantani, E. Panait, N. Ambrosino, "Functional independence, symptoms, quality of life and emotional responses following pulmonary rehabilitation", 41° Congresso Nazionale SIMFER (41st Annual National Congress of the Italian Society of Physical Medicine and Rehabilitation), Roma, October 13-16, 2013, ISBN: 978-88-7711-616-1.

[149] S. Mazzoleni, L. Buono, P. Dario, F. Posteraro, "Effects of initial exposure to upper limb robot-assisted therapy in stroke patients", in Atti Congresso Nazionale di Bioingegneria 2014 (4th National Congress on Bioengineering), Pavia, Italy, June 25-27 2014.

[150] S. Mazzoleni, G. Vagheggini, L. Buono, G. Montagnani, N. Ambrosino, P. Dario, "Effects of interactive game-based training in pulmonary rehabilitation: preliminary results", in Atti

Congresso Nazionale di Bioingegneria 2014 (4th National Congress on Bioengineering), Pavia, Italy, June 25-27 2014.

[151] F. Moretti, G. Vagheggini, S. Mazzoleni, G. Montagnani, E. Panait Vlad, P. P. Cavicchioli, G. Farru, L. Pantani, D. Berrighi, L. Buono, N. Ambrosino, "Functional independence, symptoms, quality of life and emotional responses after pulmonary rehabilitation in COPD", ERS (European Respiratory Society) International Congress, Munich, Germany, September 6-10 2014.

[152] S. Mazzoleni, P. Dario, "Innovation in rehabilitation robotics: education, research and transfer to clinical practice for increasing effectiveness of treatment and improving quality of life of patients", in Proc. R&D Management Conference, Pisa, Italy, June 23-26 2015, p. 130.

[153] M. Franceschini, P. Sale, M. Agosti, S. Mazzoleni, F. Posteraro, "Riabilitazione robotica nell'arto superiore in persone con ictus in fase sub-acuta: studio multicentrico randomizzato", 43° Congresso Nazionale Società Italiana di Medicina Fisica e Riabilitativa (SIMFER), Ferrara, Italy, October 4-7 2015.

[154] G. Stampacchia, S. Mazzoleni, A. Rustici, S. Bigazzi, V. Terrazzi, T. Tombini, A. Franchini, F. Logi, A. Gerini, "Valutazione del cammino con esoscheletro robotico di persone affette da lesione midollare completa", 43° Congresso Nazionale Società Italiana di Medicina Fisica e Riabilitativa (SIMFER), Ferrara, Italy, October 4-7 2015.

[155] S. Mazzoleni, F. Posteraro, P. Dario, "Timing of motor recovery in subacute and chronic stroke patients during upper limb robot-assisted rehabilitation", 3rd IEEE Life Sciences Grand Challenges Conference, Abu Dhabi, United Arab Emirates, January 25-26 2016.

[156] S. Mazzoleni, E. Battini, R. Crecchi, F. Posteraro, "A portable haptic robotic device for upper limb rehabilitation after stroke: preliminary results," 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, August 25-29, 2015, Milano, Italy.

[157] M. Tenucci, S. Mazzoleni, M. Galgani, G. Ciuti, G. Calvosa, P. Dario, "Spine surgery and biorobotics: clinical experience and research challenges," 6th Joint Workshop on New Technologies for Computer/Robot Assisted Surgery (CRAS 2016), Pisa, Italy , September 12-14 2016.

[158] S. Mazzoleni, E. Battini, M. Dini, S. Corbianco, A. Gerini, G. Stampacchia, "Physical and cognitive effort during robotic exoskeleton assisted walking on treadmill and overground in SCI persons," XVII Congresso Società Italiana Analisi Movimento in Clinica (SIAMOC), Milano, Italy, October 5-8 2016.

[159] G. Stampacchia, S. Mazzoleni, A. Rustici, S. Bigazzi, A. Gerini, C. D'Avino, E. Battini, A. Franchini, T. Tombini, "Robot Assisted Gait Training in complete spinal cord injury patients", 44° Congresso Nazionale Società Italiana di Medicina Fisica e Riabilitativa (SIMFER), Bari, Italy, October 23-26 2016, pp. 91-93.

[160] S. Mazzoleni, A. Focacci, M. Franceschini, A. Waldner, C. Spagnuolo, E. Battini, D. Bonaiuti, "Training per il cammino con robot end-effector in soggetti con esiti cronici di ictus: risultati di uno studio multicentrico retrospettivo," XVII Congresso Nazionale Società Italiana di Riabilitazione Neurologica (SIRN), Pisa, Italy, April 6-8, 2017.

[161] S. Mazzoleni, E. Battini, R. Crecchi, E. Falchi, D. Bernini, L. Iardella, F. Posteraro, "Effetti di un trattamento integrato stimolazione transcranica a corrente continua e terapia robotica per il polso in pazienti post-ictus in fase subactua: risultati preliminari," XVII Congresso Nazionale Società Italiana di Riabilitazione Neurologica (SIRN), Pisa, Italy, April 6-8, 2017.

[162] S. Mazzoleni, P. Catitti, E. Taglione, E. Battini, S. Roccella, F. Leoni, P. Dario, Dispostivo robotico per la verticalizzazione e la mobilità di persone con disabilià motorie gravi," XVII Congresso Nazionale Società Italiana di Riabilitazione Neurologica (SIRN), Pisa, Italy, April 6-8, 2017.

[163] S. Mazzoleni, A. Focacci, M. Franceschini, A. Waldner, C. Spagnuolo, E. Battini, D. Bonaiuti, "Training per il cammino con robot end-effector in soggetti con esiti cronici di ictus: risultati di uno studio multicentrico retrospettivo," XVII Congresso Nazionale Società Italiana di Riabilitazione Neurologica (SIRN), Pisa, Italy, April 6-8, 2017.

[164] S. Mazzoleni, E. Battini, R. Crecchi, E. Falchi, F. Posteraro "Utilizzo di un dispositivo robotico aptico e portatile per la riabilitazione di pazienti con esiti da ictus in fase subacuta: risultati preliminari," XVII Congresso Nazionale Società Italiana di Riabilitazione Neurologica (SIRN), Pisa, Italy, April 6-8, 2017.

[165] S. Mazzoleni, G. Stampacchia, A. Rustici, S. Bigazzi, E. Battini, A. Gerini, T. Tombini, C. D'Avino, A. Franchini, "Fatica e massa muscolare in pazienti con lesione midollare completa dopo training con FES-cycling" XVII Congresso Nazionale Società Italiana di Riabilitazione Neurologica (SIRN), Pisa, Italy, April 6-8, 2017.

[166] S. Mazzoleni, D. Bonaiuti, I. Aprile, M. Bartolo, E. Battini, R.S. Calabrò, R. Colombo, A. Del Felice, S. Filoni, A. Focacci, M. Franceschini, M.L. Gandolfi, G. Maggioni , G. Morone, L. Pignolo, F. Posteraro, C. Spagnuolo, S. Straudi, G. Taveggia, A. Waldner, "Studio RCT sull'efficacia del training assistito da robot associato a riabilitazione convenzionale per il recupero funzionale dell'arto superiore negli esiti di ictus: protocollo clinico," XVII Congresso Nazionale Società Italiana di Riabilitazione Neurologica (SIRN), Pisa, Italy, April 6-8, 2017.

[167] S. Mazzoleni, D. Bonaiuti, I. Aprile, M. Bartolo, E. Battini, R.S. Calabrò, G. Cervigni, S. Fabbrini, S. Filoni, A. Focacci, M. Franceschini, M.L. Gandolfi, C. Lentino, G. Morone, L. Pignolo, C. Spagnuolo, G. Stampacchia, S. Straudi, G. Taveggia, A. Waldner, "Studio RCT sull'efficacia del training assistito da robot con differenti dispositivi (su treadmill e con esoscheletri) associato a riabilitazione convenzionale per il recupero del cammino negli esiti di ictus," XVII Congresso Nazionale Società Italiana di Riabilitazione Neurologica (SIRN), Pisa, Italy, April 6-8, 2017.

[168] N. Smania, N. Valè, E. Dimitrova, S. Mazzoleni, M. Filippetti, C. Depaoli, J. Corradi, E. Battini, M. Castelli, M. Camin, M.D. Benedetti, A. Gajofatto, F. Ferraro, M. Gandolfi, "Effetto di un protocollo riabilitativo robotico intensivo sulla destrezza manuale e autonomia nelle adl in pazienti con sclerosi multipla: studio in singolo cieco, randomizzato e controllato," XVIII Congresso Nazionale Società Italiana Analisi del Movimento in Clinica (SIAMOC), Torino, Italy, October 4-7, 2017.

[169] M. Filippetti, M. Gandolfi, N. Valè, E. Dimitrova, S. Mazzoleni, C. Depaoli, J. Corradi, E. Battini, M. Castelli, M. Camin, M.D. Benedetti, A. Gajofatto, F. Ferraro, N. Smania, "Effetto di un protocollo riabilitativo robotico intensivo sulla destrezza manuale e autonomia nelle ADL in pazienti con sclerosi multipla: studio in singolo cieco, randomizzato e controllato," 45° Congresso Nazionale Società Italiana Medicina Fisica e Riabilitativa (SIMFER), Genova, Italy, October 22-25, 2017.

[170] S. Mazzoleni, E. Battini, V.D. Tran, F. Posteraro, "Valutazione dell'efficacia di un dispositivo robotico per la riabilitazione del polso in pazienti cronici post-ictus sui segmenti distali e prossimali: risultati preliminari," 45° Congresso Nazionale Società Italiana Medicina Fisica e Riabilitativa (SIMFER), Genova, Italy, October 22-25, 2017.

[171] E. Taglione, P. Catitti, E. Battini, S. Roccella, F. Leoni, S. Mazzoleni, "Sperimentazione di un dispositivo robotico per la verticalizzazione e la mobilità di persone con disabilità motorie gravi: caratteristiche tecniche e protocollo di studio,", 45° Congresso Nazionale Società Italiana Medicina Fisica e Riabilitativa (SIMFER), Genova, Italy, October 22-25, 2017.

[172] S. Mazzoleni, E. Battini, E. Ancona, M. Simonini, A. Quarenghi, G.P. Salvi, "Trattamento riabilitativo integrato per persone con malattia di Parkinson: risultati preliminari," XVIII Congresso Nazionale Società Italiana Riabilitazione Neurologica (SIRN), Trieste, Italy, April 5-7, 2018.

[173] M. Filippetti, M. Gandolfi, N. Valè, E. Dimitrova, S. Mazzoleni, C. Depaoli, J. Corradi, E. Battini, M. Castelli, M. Camin, M.D. Benedetti, A. Gajofatto, F. Ferraro, L. Saltuari, A. Waldner, A. Picelli, N. Smania, "Analisi delle alterazioni funzionali dell'arto superiore e dell'attività muscolare mediante EMGS in pazienti con sclerosi multipla: uno studio cross-sectional," XVIII Congresso Nazionale Società Italiana Riabilitazione Neurologica (SIRN), Trieste, Italy, April 5-7, 2018.

[174] S. Mazzoleni, E. Battini, T. Tombini, G. Stampacchia, "Indice innovativo di efficienza per la valutazione del training riabilitativo basato sulla stimolazione elettrica funzionale in pazienti con lesione midollare completa," XVIII Congresso Nazionale Società Italiana Riabilitazione Neurologica (SIRN), Trieste, Italy, April 5-7, 2018.

[175] S. Mazzoleni, V.D. Tran, R. Crecchi, F. Posteraro, "Effetti del trattamento robot-assistito per il polso in pazienti post-ictus in fase subacuta," XVIII Congresso Nazionale Società Italiana Riabilitazione Neurologica (SIRN), Trieste, Italy, April 5-7, 2018.

[176] S. Mazzoleni, V.D. Tran, E. Falchi, F. Posteraro, "Risultati di uno studio clinico controllato randomizzato sull'utilizzo integrato di tDCS e trattamento assistito dal robot per il polso in pazienti post-ictus in fase subacuta," XVIII Congresso Nazionale Società Italiana Riabilitazione Neurologica (SIRN), Trieste, Italy, April 5-7, 2018.

[177] M. Goffredo, S. Mazzoleni, S. Criscuolo, D. Galafate, F. Posteraro, M. Franceschini, "Monitoraggio della terapia robotica dell'arto superiore in pazienti post-ictus in fase suubacuta: analisi di parametri cinematici," XVIII Congresso Nazionale Società Italiana Riabilitazione Neurologica (SIRN), Trieste, Italy, April 5-7, 2018.

[178] E. Dimitrova, N. Valè, E. Battistuzzi, S. Mazzoleni, E. Battini., M. Gravina, V. Zatezalo, C. Geroin A. Santamato, A. Picelli, L. Saltuari, N. Smania, M. Gandolfi, "Effetti di un trattamento intensivo robot-assistito sul recupero funzionale dell'arto superiore in pazienti affetti da spasticità: studio randomizzato controllato in singolo cieco in pazienti con ictus cronico," XVIII Congresso Nazionale Società Italiana Riabilitazione Neurologica (SIRN), Trieste, Italy, April 5-7, 2018.

[179] N. Valè, M. Gandolfi, E. Dimitrova, M. Filippetti, S. Mazzoleni, C. Depaoli, J. Corradi, E. Battini, M. Castelli, M. Camin, M.D. Benedetti, A. Gajofatto, F. Ferraro, L. Saltuari, A. Waldner, A. Picelli, N. Smania, "Effetti di un trattamento robot-assistito sulla destrezza manuale, autonomia nelle ADL e attività muscolare in pazienti con sclerosi multipla: studio randomizzato controllato," XVIII Congresso Nazionale Società Italiana Riabilitazione Neurologica (SIRN), Trieste, Italy, April 5-7, 2018.

[180] S. Mazzoleni, E. Battini, A. Rustici, G. Stampacchia, "An overground robotic exoskeleton gait training in complete spinal cord injured patients: preliminary results," Atti Sesto Congresso Nazionale di Bioingegneria 2018, Milano, 25-27 giugno 2018.

[181] S. Mazzoleni, E. Battini, E. Taglione, P. Catitti, "An innovative robotic wheelchair for mobility and verticalisation of persons affected by spinal cord injury," Atti Sesto Congresso Nazionale di Bioingegneria 2018, Milano, 25-27 giugno 2018.

[182] S. Mazzoleni, V.D. Tran, E. Falchi, P. Dario, F. Posteraro, "Motor recovery in subacute stroke patients following wrist robot-assisted rehabilitation,"Atti Sesto Congresso Nazionale di Bioingegneria 2018, Milano, 25-27 giugno 2018.

[183] M. Goffredo, S. Mazzoleni, A. Pesci, S. Criscuolo, D. Galafate, F. Infarinato, F. Posteraro, M. Franceschini, "Kinematic monitoring of upper limb robot-assisted therapy in subacute stroke patients," Atti Sesto Congresso Nazionale di Bioingegneria 2018, Milano, 25-27 giugno 2018.

[184] A. Sorriento, F.O.A Ba Fakih, C. Stefanini, L. Fabbri, G. Ciuti, M. Scaglione, P. Dario, S. Mazzoleni, "Bone healing monitoring based on external fixator instrumentation: three case studies," Atti Sesto Congresso Nazionale di Bioingegneria 2018, Milano, 25-27 giugno 2018.

[185] V.D. Tran, P. Dario, S. Mazzoleni, "Upper limb biomechanical model for orthopaedic applications: preliminary results," Atti Sesto Congresso Nazionale di Bioingegneria 2018, Milano, 25-27 giugno 2018.

Other publications

[186] S. Mazzoleni, S. Micera, P. Dario, "Patologie muscolo-scheletriche connesse ad attività lavorative", Osservatorio sulle Tecnologie della Riabilitazione, Centro INAIL (Italian Workers Compensation Authority) di Ricerca Applicata in Bioingegneria della Riabilitazione, 2004 (unpublished essay).

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