

# Matteo Malosio

## Curriculum Vitae

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*"Logic will get you from A to B. Imagination will take you everywhere."  
Albert Einstein*

### Info

Date of birth November 27th, 1974 at Milano, Italy

Nationality Italian

Driving Lic. B

LinkedIn [http://it.linkedin.com/pub/  
matteo-malosio/2/91b/796](http://it.linkedin.com/pub/matteo-malosio/2/91b/796)

Google [https://scholar.google.it/  
citations?user=S9Cc8N0AAAAJ](https://scholar.google.it/citations?user=S9Cc8N0AAAAJ)

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### Professional Aspiration and Current Skills

My professional aspiration is to contribute to the development of robotic solutions in the medical field, focusing on rehabilitation and assistive applications to re-enable impaired people to perform activities of daily living. Over the years I've had the opportunity to face different aspects of robotics design, from mechanical conception and optimization to control system and interface development, acquiring experiences both dealing with research activities and industrial projects. Conception and development of new mechatronic systems, unconventional mechanisms and dynamic structures, exploiting innovative and smart actuators and sensor systems, are my main areas of research interest and knowledge.

### Experience

#### Research

02.'02–09.'07 **Researcher in Robotics**, *Institute of Industrial Technologies and Automation - National Council of Research*, Milan, Italy.

Member of the Intelligent and Autonomous Robot Systems group. Research sectors: parallel and hybrid kinematic architectures, mechanism optimization for industrial and medical sectors, PC-based control systems, safe-human robot interaction and meso-micro assembling. Detailed achievements:

- Scientific responsible and mechatronic designer of rehabilitation robotics activities
  - Upper-limb exoskeleton, parallel device for ankle rehabilitation, end-effector device based on variable stiffness actuators, end-effector upper-limb rehabilitation platform, active couch for radiotherapy operations.
- Responsible of the *LINarm++* experiment (European ECHORD++ project) devoted to the development of a multimodal device for neuromuscular rehabilitation of the upper limb.
- Responsible of the *RIPREND@home* project devoted to the development of affordable devices for neurorehabilitation.
- Responsible of *Mechatronics of surgical stations* activities in the ACTIVE European Project n.FP7-ICT-2009-6270460.
- Participation in *Physically harmless and low-cost kinematics* activities of the SMERobot<sup>TM</sup> European Project n.FP6-NMP-2005-11838.
- MEPROMEC project - Development of Methodologies for Mechatronic Design.

Visiting researcher at:

- Sensory Motor Systems Lab, University ETH Zurich, resp. prof. R.Riener (2010)
- Robotics & Automation Laboratory, University of Ontario Institute of Technology (UOIT), Oshawa, resp. Dr. Dan Zhang, PEng. (2011)

### Working

10.'07–06.'08 **FEM analyst and mechanical designer**, *Center of Industrial Studies - Ce.S.I.*, Cologno Monzese, Italy.

Finite element analyses and mechanical designer of machining tools and special devices. Detailed achievements:

- High-performance milling and turning machining tools.
- Participation in FP6 AFFIX - Aligning, Holding and Fixing Flexible and Difficult to Handle Components European Project:
  - Conception and simulation of an active fixturing device for turbine blades machining.
- Kite Gen project
  - High altitude wind power plant.

'03 **Automation Consultant**, *ACS s.r.l.*, Monza - Milan, Italy.

Optimization of AGV navigation algorithms; image-based testbench for seals quality assessment.

'02 **Mechanical Engineering Assistant**, *Gilli Luigi and C. sas Machine and automatisms design*, Turin, Italy.

Design of an automatic line for brakes assembly.

09.'99–01.'02 **Designer and integrator of industrial robots**, *C.I.A. Automation and Robotics*, Albiate - Milan, Italy.

Software developer of PC-based control systems for machines and automatic plants. Mechanical designer of industrial robotic workcells.

### Other

2010–now **Software developer**, *Italian Association of Mechanical Music - AMMI*, Cesena, Italy.

Development of applications to scan and reproduce old musical pieces by mechanical or automated musical instruments.

2011 **Software developer**, *SHAPE!*, Milan, Italy.

Technical direction and development of the *SHAPE!* artistic installation exposed at the Fuorisalone event.

2006 **Start Cup Lombardy Competitor**, Milan, Italy.

Winning team member of the Lecco Chambers of Commerce award for the project proposal named Homerus.

## Education

2013-2015 **Doctoral degree in applied mechanics**, *University of Brescia*, Brescia, Italy.

Tutor: Prof. Giovanni Legnani

1993-1999 **Master degree in Mechanical Engineering**, *Politecnico di Milano*, Milan, Italy.

Five years course in Mechanical Engineering, specialization in Automation & Robotics.

1988-1993 **Scientific high school degree**, *Liceo Scientifico Federico Enriques*, Lissone (MB), Italy.

## Other courses

2007 **3rd Summer European University in Surgical Robotics**, *LIRMM - Laboratoire d'Informatique, de Robotique et de MicroÉlectronique de Montpellier*, Montpellier, France.

2006 **KMM - Second Summer School**, *CISM - International Centre For Mechanical Sciences*, Udine, Italy.

Knowledge-based multicomponent materials for durable and safe performance

2001 **Course in Globalization and Development - Actors and instruments for International Cooperation**, *ASERI - Postgraduate School of Economics and International Relations*, Milano, Italy.

## Personal skills and competences

### Languages

Self-assessment European level CEFR (C2 maximum evaluation)

		Comprehension		Speaking		Writing
		Listening	Reading	Interaction	Production	
Italian	Mother Tongue	C2	C2	C2	C2	C2
English	Advanced	C1	C1	C1	C1	C1
French	Basic	A1	A2	A2	A1	A1

### Social skills and competences

Ability to work in cooperative environments and to interact with people and colleagues, acquired mainly during the period as researcher at CNR-ITIA. Ability to summarize and to report ideas, mainly acquired in experiences during research activities in collaborative projects.

### Organisational skills and competences

Experience in coordinating and reviewing activities, mainly acquired in the robotics laboratory, in national and international projects, and in activities of tutorship of master theses works.

### Technical skills and competences

Multibody simulations for rigid and flexible bodies. FEM simulations for structural, thermic and dynamic analyses. Abilities in mechanical design. Design, dimensioning and numerical optimization of machines and mechanisms. Design and implementation of control systems for robotic devices. 2D and 3D image processing techniques.

### Computer skills and competences

OS (Linux, Windows), Software CAD 3D (AutoCAD, Inventor, Solidworks, Unigraphics, Solidedge), FEM and multibody analysis tools (Unigraphics, Inventor, ADAMS, Nastran, Ansys Workbench), programming languages (Python, C++, VisualBasic, LaTeX), numerical analysis software (Matlab, NumPy, SymPy, Scipy), dynamic systems simulation (Simulink), image processing libraries (Scipy.ndimage, Python Imaging Library, Matlab/Image Processing Toolbox)

### Artistic skills and competences

Good knowledge of music, clarinet player in town's bands.

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### Interests and Hobbies

Playing with my kids as much as possible. Reading books. Spending time outdoors. I like to spend holidays traveling, possibly by bike. Sport: cycling, skating, skiing, trekking, sailing. Python and Arduino fan.

I authorise the use of my personal data in compliance with Legislative Decree 196/03.

Matteo Malosio



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## PUBLICATIONS

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### Articles in International Peer-Reviewed Journals

- [1] M. Malosio, F. Corbetta, F. Ramírez Reyes, H. Giberti, G. Legnani, and L. Molinari Tosatti, “On a two-dof parallel and orthogonal variable-stiffness actuator: An innovative kinematic architecture,” *Robotics*, vol. 8, no. 2, 2019. [Online]. Available: <https://www.mdpi.com/2218-6581/8/2/39>
- [2] A. Scano, A. Chiavenna, M. Malosio, L. Molinari Tosatti, and F. Molteni, “Robotic assistance for upper limbs may induce slight changes in motor modules compared with free movements in stroke survivors: A cluster-based muscle synergy analysis,” *Frontiers in Human Neuroscience*, vol. 12, p. 290, 2018. [Online]. Available: <https://www.frontiersin.org/article/10.3389/fnhum.2018.00290>
- [3] A. Chiavenna, A. Scano, M. Malosio, L. Molinari Tosatti, and F. Molteni, “Assessing user transparency with muscle synergies during exoskeleton-assisted movements: A pilot study on the lightarm device for neurorehabilitation,” *Applied Bionics and Biomechanics*, no. Article ID 7647562, p. 10, 2018. [Online]. Available: <https://doi.org/10.1155/2018/7647562>
- [4] T. Dinon, M. Caimmi, A. Chiavenna, M. Malosio, A. Prini, A. Scano, L. M. Tosatti, C. Currò, B. Lenzi, and V. Megale, “Dualarm: An open-source and 3d-printable device for upper limb neurorehabilitation,” *Journal of Rehabilitation and Assistive Technologies Engineering*, vol. 5, p. 2055668317749989, 2018. [Online]. Available: <https://doi.org/10.1177/2055668317749989>
- [5] A. Scano, A. Chiavenna, M. Malosio, and L. Molinari Tosatti, “Kinect v2 performance assessment in daily-life gestures: Cohort study on healthy subjects for a reference database for automated instrumental evaluations on neurological patients,” *Applied Bionics and Biomechanics*, no. Article ID 8567084, p. 16, 2017. [Online]. Available: <https://doi.org/10.1155/2017/8567084>
- [6] A. Scano, A. Chiavenna, M. Malosio, L. Molinari Tosatti, and F. Molteni, “Muscle synergies-based characterization and clustering of poststroke patients in reaching movements,” *Frontiers in Bioengineering and Biotechnology*, vol. 5, p. 62, 2017. [Online]. Available: <https://www.frontiersin.org/article/10.3389/fbioe.2017.00062>
- [7] M. Malosio, G. Spagnuolo, A. Prini, L. M. Tosatti, and G. Legnani, “Principle of operation of rotwwc-vsa, a multi-turn rotational variable stiffness actuator,” *Mechanism and Machine Theory*, vol. 116, pp. 34 – 49, 2017. [Online]. Available: <http://www.sciencedirect.com/science/article/pii/S0094114X17301192>
- [8] G. Spagnuolo, M. Malosio, T. Dinon, L. M. Tosatti, and G. Legnani, “Analysis and synthesis of linwwc-vsa, a variable stiffness actuator for linear motion,” *Mechanism and Machine Theory*, vol. 110, pp. 85 – 99, 2017. [Online]. Available: <http://www.sciencedirect.com/science/article/pii/S0094114X16304700>
- [9] M. Malosio, M. Caimmi, M. C. Cottini, A. Crema, T. Dinon, M. Mihelj, L. M. Tosatti, J. Podobnik, A. Prini, C. Seneci, and G. Spagnuolo, “An affordable, adaptable, and hybrid assistive device for upper-limb neurorehabilitation,” *Journal of Rehabilitation and Assistive Technologies Engineering*, vol. 3, p. 2055668316680980, 2016. [Online]. Available: <http://dx.doi.org/10.1177/2055668316680980>
- [10] M. Caimmi, E. Guanziroli, M. Malosio, N. Pedrocchi, F. Vicentini, L. Molinari Tosatti, and F. Molteni, “Normative Data for an Instrumental Assessment of the Upper-Limb Functionality,” *BioMed Research International*, vol. 2015, no. Article ID 484131, 2015.

- [11] F. Vicentini, N. Pedrocchi, M. Malosio, and L. Molinari Tosatti, "SafeNet: a methodology for integrating general-purpose unsafe devices in safe-robot rehabilitation systems," *Comput Methods Programs Biomed*, vol. 116, no. 2, pp. 156–168, Sep 2014.
- [12] N. Pedrocchi, F. Vicentini, M. Malosio, and L. Molinari Tosatti, "Safe human-robot cooperation in an industrial environment," *Int J Adv Robot Syst*, vol. 10, no. 27, 2013. [Online]. Available: [http://www.intechopen.com/journals/international\\_journal\\_of\\_advanced\\_robotic\\_systems/safe-human-robot-cooperation-in-an-industrial-environment](http://www.intechopen.com/journals/international_journal_of_advanced_robotic_systems/safe-human-robot-cooperation-in-an-industrial-environment)
- [13] D. Zhang, Z. Gao, M. Malosio, and G. Coppola, "Analysis of the novel flexure parallel micromanipulators based on multi-level displacement amplifier with/without symmetrical design," *International Journal of Mechanics and Materials in Design*, vol. 8, no. 4, pp. 311–325, 2012. [Online]. Available: <http://dx.doi.org/10.1007/s10999-012-9197-3>
- [14] M. Malosio, N. Pedrocchi, and L. M. Tosatti, "Algorithm to offset and smooth tessellated surfaces," *Computer-Aided Design and Applications*, vol. 6, no. 3, pp. 351–363, 2009. [Online]. Available: <http://dx.doi.org/10.3722/cadaps.2009.351-363>

## Patents

- [1] M. Malosio, S. Negri, N. Pedrocchi, L. Molinari Tosatti, and F. Vicentini, "Dispositivo per il supporto e per la regolazione della posizione della testa di un paziente durante interventi chirurgici," Patent Request MI2012A001378, 8 3, 2012.
- [2] M. Malosio, S. Negri, N. Pedrocchi, M. Caimmi, F. Vicentini, and L. Molinari Tosatti, "Device and method for the rehabilitation of foot movements," Patent Request PCT/IB2012/057461, 12 20, 2011.
- [3] M. Malosio, N. Pedrocchi, and L. Molinari Tosatti, "Biomedical device for robotized rehabilitation of a human upper limb, particularly for neuromotor rehabilitation of the shoulder and elbow joint," Patent WO/2012/042471, 4 5, 2012. [Online]. Available: <http://patentscope.wipo.int/search/en/WO2012042471>
- [4] F. Vicentini, N. Pedrocchi, and M. Malosio, "Safety device for the safe use of industrial apparatus and robots, and control method for realtime verification of the kinematic state values of a robotized apparatus," Patent WO/2012/042470, 4 5, 2012. [Online]. Available: <http://patentscope.wipo.int/search/en/WO2012042470>
- [5] R. Sala, L. Molinari Tosatti, M. Malosio, and D. Dallefrate, "Patient positioning and moving system for radiotherapy," Patent WO/2008/041092, 4 10, 2008. [Online]. Available: <http://patentscope.wipo.int/search/en/WO2008041092>

## Conference proceedings

- [1] A. Scano, A. Chiavenna, M. Caimmi, M. Malosio, L. M. Tosatti, and F. Molteni, "Effect of human-robot interaction on muscular synergies on healthy people and post-stroke chronic patients," in *2017 International Conference on Rehabilitation Robotics (ICORR)*, July 2017, pp. 527–532.
- [2] G. Spagnuolo, M. Malosio, A. Scano, M. Caimmi, G. Legnani, and L. Tosatti, "Passive and active gravity-compensation of lightarm, an exoskeleton for the upper-limb rehabilitation," in *Rehabilitation Robotics (ICORR), 2015 IEEE International Conference on*, Aug 2015, pp. 440–445.

- [3] A. Scano, G. Spagnuolo, M. Caimmi, A. Chiavenna, M. Malosio, G. Legnani, and L. Tosatti, "Static and dynamic characterization of the lightarm exoskeleton for rehabilitation," in *Rehabilitation Robotics (ICORR), 2015 IEEE International Conference on*, Aug 2015, pp. 428–433.
- [4] A. Scano, M. Caimmi, A. Chiavenna, M. Malosio, and L. M. Tosatti, "Kinect one-based biomechanical assessment of upper-limb performance compared to clinical scales in post-stroke patients," in *Engineering in Medicine and Biology Society (EMBC), 2015 37th Annual International Conference of the IEEE*, Aug 2015, pp. 5720–5723.
- [5] M. Malosio, M. Caimmi, G. Legnani, and L. Tosatti, "Linarm: a low-cost variable stiffness device for upper-limb rehabilitation," in *Intelligent Robots and Systems (IROS 2014), 2014 IEEE/RSJ International Conference on*, Sept 2014, pp. 3598–3603.
- [6] M. Malosio, M. Caimmi, M. Ometto, and L. Tosatti, "Ergonomics and kinematic compatibility of pkankle, a fully-parallel spherical robot for ankle-foot rehabilitation," in *Biomedical Robotics and Biomechatronics (2014 5th IEEE RAS EMBS International Conference on*, Aug 2014, pp. 497–503.
- [7] A. Scano, M. Caimmi, M. Malosio, and L. Tosatti, "Using kinect for upper-limb functional evaluation in home rehabilitation: A comparison with a 3d stereoscopic passive marker system," in *Biomedical Robotics and Biomechatronics (2014 5th IEEE RAS EMBS International Conference on*, Aug 2014, pp. 561–566.
- [8] M. Malosio, S. Negri, N. Pedrocchi, F. Vicentini, and L. Tosatti, "A 3t2r parallel and partially decoupled kinematic architecture," in *Intelligent Robots and Systems (IROS), 2013 IEEE/RSJ International Conference on*, Nov 2013, pp. 444–449.
- [9] M. Malosio, S. Negri, N. Pedrocchi, F. Vicentini, F. Cardinale, and L. Tosatti, "The kinematic architecture of the active headframe: A new head support for awake brain surgery," in *Engineering in Medicine and Biology Society (EMBC), 2012 Annual International Conference of the IEEE*, 2012, pp. 1417–1421.
- [10] M. Malosio, S. Negri, N. Pedrocchi, F. Vicentini, M. Caimmi, and L. Molinari Tosatti, "A spherical parallel three degrees-of-freedom robot for ankle-foot neuro-rehabilitation," in *Engineering in Medicine and Biology Society (EMBC), 2012 Annual International Conference of the IEEE*, 2012, pp. 3356–3359.
- [11] M. Malosio and Z. Gao, "Multi-stage piezo stroke amplifier," in *Advanced Intelligent Mechatronics (AIM), 2012 IEEE/ASME International Conference on*, 2012, pp. 1086–1092.
- [12] D. Zhang, Z. Gao, M. Malosio, and G. Coppola, "A novel flexure parallel micromanipulator based on multi-level displacement amplifier," in *Third International Conference on Sensor Device Technologies and Applications, Proceedings of the*, 2012, pp. 31–37.
- [13] M. Caimmi, N. Pedrocchi, A. Scano, M. Malosio, F. Vicentini, L. Tosatti, and F. Molteni, "Proprioceptivity and upper-extremity dynamics in robot-assisted reaching movement," in *Biomedical Robotics and Biomechatronics (BioRob), 2012 4th IEEE RAS EMBS International Conference on*, 2012, pp. 1316–1322.
- [14] F. Vicentini, N. Pedrocchi, M. Malosio, and L. Tosatti, "High-accuracy hand-eye calibration from motion on manifolds," in *Intelligent Robots and Systems (IROS), 2011 IEEE/RSJ International Conference on*, 2011, pp. 3327–3334.

- [15] M. Malosio, N. Pedrocchi, F. Vicentini, and L. Tosatti, "Analysis of elbow-joints misalignment in upper-limb exoskeleton," in *Rehabilitation Robotics (ICORR), 2011 IEEE International Conference on*, 2011, pp. 1–6.
- [16] M. Malosio, N. Pedrocchi, F. Vicentini, and L. Molinari Tosatti, "Shoulder adaptable and elbow singularity-free exoskeleton," in *Applied Bionics and Biomechanics (ICABB), 2010 International Conference on*, 2010.
- [17] N. Pedrocchi, M. Malosio, F. Vicentini, L. Molinari Tosatti, and G. Legnani, "Commercial controllers enhancements and open source robot control software: Addressed solutions for demanding applications," in *Workshop on Innovative Robot Control Architectures for Demanding (Research) Applications*, 2010. [Online]. Available: <http://www.rob.cs.tu-bs.de/news/icra2010>
- [18] N. Pedrocchi, M. Malosio, and L. Tosatti, "Safe obstacle avoidance for industrial robot working without fences," in *Intelligent Robots and Systems, 2009. IROS 2009. IEEE/RSJ International Conference on*, 2009, pp. 3435–3440.
- [19] N. Pedrocchi, M. Malosio, L. Molinari Tosatti, and G. Ziliani, "Obstacle avoidance algorithm for safe human-robot cooperation in small medium enterprise scenario," in *40th International Symposium on Robotics (ISR), proceedings of the*, 2009.
- [20] C. Pagano, M. Malosio, and I. Fassi, "Basic characterization of a linear elastomer actuator," in *ASME 3rd International Conference on Micro- and Nanosystems IDETC/CIE, Proceedings of the*, vol. 6. ASME, 2009, pp. 807–812.
- [21] D. Dallefrate, D. Colombo, M. Malosio, and L. Molinari Tosatti, "A modular architecture for robot programming and control in a pc-based environment," in *1st CIRP-International Seminar on Assembly Systems, Proceedings of the*, 2006.
- [22] S. Oberer, M. Malosio, and R. D. Schraft, "Investigation of robot-human impact," in *37th International Symposium on Robotics, Proceedings of the*, 2006.
- [23] M. Malosio, L. Zanoni, and L. Molinari Tosatti, "A numerical environment to optimize the design of machines," in *3rd Int. CIRP Conference on Reconfigurable Manufacturing, Proceedings of the*, Ann Arbor, MI, USA, 2005.
- [24] M. Malosio, M. Finardi, S. Negri, L. Molinari Tosatti, and F. Jatta, "High-level robot programming in a pc-based control environment," in *8th IEEE International Conference on Intelligent Engineering Systems, Proceedings of the*, Cluj-Napoca, Romania, 2004. [Online]. Available: [http://www.ines-conf.org/ines-conf/24\\_INES2004.pdf](http://www.ines-conf.org/ines-conf/24_INES2004.pdf)
- [25] —, "A modular architecture for high-level robot programming and control in a pc-based environment," in *10th IEEE International Conference on Methods and Models in Automation and Robotics, Proceedings of the*, 2004.
- [26] C. Pagano, E. Ferraris, M. Malosio, and I. Fassi, "Microhandling of parts in presence of adhesive forces," in *CIRP Seminar on Micro and Nano tecnology*, Copenhagen, 2003, pp. 81–84.

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## Book Chapters

- [1] A. Mastropietro, S. Arlati, S. Mrakic-Sposta, L. Fontana, C. Franchin, M. Malosio, S. Pittaccio, C. Gramigna, F. Molteni, M. Sacco, and G. Rizzo, *Quantitative EEG and Virtual Reality to Support Post-stroke Rehabilitation at Home*. Cham: Springer International Publishing, 2016, pp. 147–157. [Online]. Available: [http://dx.doi.org/10.1007/978-3-319-39687-3\\_15](http://dx.doi.org/10.1007/978-3-319-39687-3_15)



- [2] A. Scano, M. Caimmi, A. Chiavenna, M. Malosio, and L. Molinari Tosatti, *Virtual Reality Enhanced Robotic Systems for Disability Rehabilitation*, ser. In press. IGI-Global, 2016, ch. A Kinect-based biomechanical assessment of neurological patients' motor performances for domestic rehabilitation.
- [3] M. Malosio, N. Pedrocchi, F. Vicentini, L. Molinari Tosatti, M. Caimmi, and F. Molteni, *Robotics: State of the Art and Future Trends*, ser. Computer Science, Technology and Applications Series. Nova Science Publishers, Incorporated, 2012, ch. Robotics in Rehabilitation - Part I: Requirements and Control Issues. [Online]. Available: <http://books.google.it/books?id=Rk08XwAACAAJ>
- [4] —, *Robotics: State of the Art and Future Trends*, ser. Computer Science, Technology and Applications Series. Nova Science Publishers, Incorporated, 2012, ch. Robotics in Rehabilitation - Part II: Design of Devices and Mechanisms. [Online]. Available: <http://books.google.it/books?id=Rk08XwAACAAJ>
- [5] C. Pagano, M. Malosio, and I. Fassi, *Precision Assembly Technologies and Systems*. Springer Boston, 2010, vol. 315, ch. Monodirectional Positioning Using Dielectric Elastomers, pp. 180–187. [Online]. Available: <http://www.springer.com/computer/theoretical+computer+science/book/978-3-642-11597-4>

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## International Short Communications

- [1] A. Scano, A. Chiavenna, M. Malosio, L. M. Tosatti, and F. Molteni, “Kinect {V2} implementation and testing of the reaching performance scale for motor evaluation of patients with neurological impairment,” *Medical Engineering & Physics*, pp. –, 2018. [Online]. Available: <https://www.sciencedirect.com/science/article/pii/S1350453318300596>
- [2] H. Hajimirzaalian, M. Caimmi, and M. Malosio, “An open low-cost emg acquisition system for analysis and robot control,” in *1st Clinical Movement Analysis World Conference*, Sept 2014.
- [3] M. Malosio, M. Caimmi, and L. Molinari Tosatti, “Linarm: a low-cost robotic device for upper-limb rehabilitation at home,” in *1st Clinical Movement Analysis World Conference*, Sept 2014.
- [4] A. Scano, M. Caimmi, M. Malosio, and L. Molinari Tosatti, “Motor control indexes in rehabilitation: effect of the sampling frequency,” in *1st Clinical Movement Analysis World Conference*, Sept 2014.
- [5] G. Spagnuolo, M. Malosio, J. C. Dalberto, M. Caimmi, and L. Molinari Tosatti, “Lightarm: A highly adaptable gravity-compensated exoskeleton for upper-limb rehabilitation and adl assistance.” in *1st Clinical Movement Analysis World Conference*, Sept 2014.
- [6] M. Caimmi, A. Chiavenna, C. Giovanzana, M. Malosio, F. Molteni, and L. Molinari Tosatti, “A robotic device for ankle motor evaluation and rehabilitation in patients with upper with upper motor neuron syndrome.” in *1st Clinical Movement Analysis World Conference*, Sept 2014.
- [7] M. Caimmi, A. Chiavenna, F. Digiaco, G. Gasperini, C. Giovanzana, M. Malosio, N. Pedrocchi, A. Scano, F. Vicentini, F. Molteni, and L. Molinari Tosatti, “Successfully using a passive approach in upper-limb robotic rehabilitation of chronic stroke patients.” in *1st Clinical Movement Analysis World Conference*, Sept 2014.
- [8] M. Caimmi, G. Eleonora, M. Malosio, N. Pedrocchi, F. Vicentini, L. Molinari Tosatti, and F. Molteni, “Instrumental evaluation of the upper limb: Control data and aging effects,” *Annals of Physical and Rehabilitation Medicine*, vol. 57, no. Supplement 1, p. e102, 2014.

- [9] M. Caimmi, G. Gasperini, M. Malosio, A. Scano, L. Molinari Tosatti, and F. Molteni, "Using robotic rehabilitation in stroke patients with body scheme impairment," *Annals of Physical and Rehabilitation Medicine*, vol. 57, no. Supplement 1, p. e13, 2014.
- [10] M. Caimmi, M. Malosio, N. Pedrocchi, A. Scano, F. Vicentini, L. Molinari Tosatti, and F. Molteni, "Reaching and hand-to-mouth motion primitives for the functional assessment of motor abilities in robot-assisted rehabilitation practice," in *COST Symposium: Rehabilitation Robotics - Clinical Evidence and Technical Developments*, University of Twente, Enschede, Netherlands, 2013.
- [11] M. Caimmi, G. Gasperini, M. Malosio, N. Pedrocchi, F. Vicentini, L. Molinari Tosatti, and F. Molteni, "The biomechanics of the reaching movement in friedreich patients," in *XI Congress of European Federation of Research in Rehabilitation (EFRR), Proceedings of the*, 2011.
- [12] M. Caimmi, M. Malosio, N. Pedrocchi, F. Vicentini, L. Molinari Tosatti, and F. Molteni, "The biomechanics of the reaching movement in friedreich and stroke patients," in *20th annual Meeting of the European Society of Movement Analysis in Clinics (ESMAC), Proceedings of the*, 2011.
- [13] —, "Robot-assisted reaching against gravity: Emg activity, subject's movement perception and biomechanics," in *20th annual Meeting of the European Society of Movement Analysis in Clinics (ESMAC), Proceedings of the*, 2011.
- [14] M. Malosio, N. Pedrocchi, and L. Tosatti, "Robot-assisted upper-limb rehabilitation platform," in *Human-Robot Interaction (HRI), 2010 5th ACM/IEEE International Conference on*, 2010, pp. 115–116.
- [15] M. Malosio, F. Pedrazzini, and M. Gianotto, "Python, arduino and mech music," in *EuroPython 2010, Proceedings of*, 2010. [Online]. Available: <http://wiki.europython.eu/Talks/Python%20Arduino%20And%20Mech%20Music>
- [16] M. Malosio, "Simulation of crash-tests in robotics," in *4th Workshop fur OTS-Systeme in der Robotik*, 2005.

## National Short Communications

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