

Curriculum Vitae

Marco Iosa



Personal information

I was born on February 28, 1976 in Rome.

I'm married and I have two sons and one daughter.

I live in Rome, via Tommaso da Celano 15, 00179 Roma.

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Curriculum studiorum

Degree in Mechanical Engineering achieved in 2001 at Università degli studi di Roma "La Sapienza" (110/110 cum laude)

Philosophy Doctorate in Neurophysiology in 2006 at the same University.

Actual position

Associate Professor at University of Rome Sapienza, Department of Psychology, in the field of Psychometrics.

Since May 2016 Member of the Ethical Committee of I.R.C.C.S. Fondazione Santa Lucia as expert in biostatistics.

Since June 2017 Member of Directive Committee of the Italian Society of High Specialized Rehabilitation (SIRAS)

Activities for Scientific Journals

- Member of the Editorial Board of "Frontiers in Human Neuroscience"
- Member of the Editorial Board of "Sensors"
- Deputy Editor of "Functional Neurology"
- Member of the Editorial Board of "EC Psychology and Psychiatry"
- Review Editor for the section Neurorehabilitation of "Frontiers in Neurology"
- Lead Guest Editor of the Special Issue "New Technologies for Stroke Rehabilitation" of the journal "Stroke Research and Treatment" (2012)
- Lead Guest Editor of the Special Issue "Neuro-motor control and feed-forward models of locomotion in humans" of the journal "Frontiers in Human Neuroscience" (2015)
- Referee for more than 30 scientific journals in the fields of neurorehabilitation, bioengineering, neuroscience.

Academic Qualification as Professor

I obtained the Italian National Academic Qualification as Associate Professor in:

1) General Psychology, Psychobiology and Psychometry (11/E1 since 26th july 2017)

2) Bioengineering (09G2, since 30th march 2017)

3) Sciences of clinical professions and medical technologies (06N1, since 31st march 2017)

Other activities and responsibilities

I have participated to different European Projects such as ABC Project (Augmented Brain-neural computer interface Communication, 2011-2014), Better Project (Brain-neural computer interaction

for Evaluation and Testing of physical Therapies in stroke Rehabilitation of gait disorders, 2010-2012) and now Symbitron Project (Symbiotic man-machine interactions in wearable exoskeletons to enhance mobility for paraplegics, since 2013) for which I am workpackage leader. All these projects have been supported by European Union, through the 7th Framework Program in Fondazione Santa Lucia.

Since 1998, I am a member of the association I.Li.Tec. (Independent Life Technologies) and in 2004-2005 I was the vice president of this association.

Since 2010 I am a member of the Scientific Committee of DEA Formazione e Servizi, a society working in the field of continuing medical education.

I have been scientific responsible, coordinator and teacher in many courses of continuous education in medicine for Fondazione Santa Lucia, DEA Formazione e Servizi and other societies. Some of them are reported below:

“Clinical data analysis”; “Statistical and graphical evaluation of clinical experimental data”; “New instrumented methodologies for the assessment and treatment of cerebrovascular, neurodegenerative and oncologic pathologies”, “Technologies for the assessment, motor rehabilitation and autonomy”, “How measuring the movement in clinic: the motor instrumented assessment”; “Disability: towards which autonomy” and many others.

Previous positions

From December 2008 to August 2020 I was a Senior Researcher of Clinical Laboratory of Experimental Neurorehabilitation, directed by Dr. Stefano Paolucci, and since December 2018 director of the Laboratory for the Study of Mind and Action in Rehabilitation Technologies (Smart Lab) of Fondazione Santa Lucia IRCCS (Rome, Italy)

From 2013 to 2020, Contract Professor of the course “Biomechanics and Quantitative Analysis” at the University of Rome “Tor Vergata”, since January 2015 to 2020 Contract Professor of the course “Medical Statistics”, since March 2017 to 2020 Contract Professor of the course “Statistics for experimental and technological research”, all of them at the University of Rome “Tor Vergata”

From 2001 to 2002 I was a coordinator and teacher of a web-course for people with disabilities.

From 2002 to 2005 I conducted my researches in the fields of human motor control, innovative methodologies in rehabilitation and space biomedicine, in the Department of Neuromotor Physiology of the I.r.c.c.s. Fondazione Santa Lucia, directed by Prof. Lacquaniti. The researches carried out in this period were part of my philosophy doctorate.

From 2005 to 2008 I have a post-doc fellowship in the Department of Human Movement and Sport Sciences of Università degli Studi di Roma “Foro Italico” directed by Prof. Cappozzo, conducting my researches in field of functioning and motor capacity assessment, by means of human movement analysis, especially for people with dystrophies and children with cerebral palsy.

I had been worked as teacher in the course of Biomechanical Technologies at Università degli Studi di Roma “Foro Italico” (2007), and in many courses of continuous education in medicine.

I was an exam committee member for the courses of Biomechanics and Biomechanical Technologies at Università degli Studi di Roma “Foro Italico” (2006-2008).

In 2009 I have also collaborated with Fondazione Don Carlo Gnocchi ONLUS. Furthermore, I was assistant of technical consultant of the law court of Naples.

From 2010 to 2013 I have been working at the BETTER Project (Brain-neural computer interaction for Evaluation and Testing of physical Therapies in stroke Rehabilitation of gait disorders) supported by European Union, through the 7th Framework Program in Fondazione Santa Lucia..

Awards and honors

I was elected vice-president of I.Li.Tec. (Independent Life Technologies) association from 2004 to 2005.

I won the prize as best study in the field of human movement analysis at the XI congress of Italian Society of Neurological Rehabilitation in 2011 titled “Stability and Harmony of Gait in Children with Cerebral Palsy”, Iosa M, Marro T, Paolucci S, Morelli D.

I was co-author of the study winner of the prize for young researcher of XII congress of Italian Society of Neurological Rehabilitation in 2012 “Identification of best candidate stroke patients for robotic gait therapy: a randomized controlled trial”, Morone G, Iosa M, Bragoni M, et al.

I was co-author of the study winner of the prize for research in physiotherapy of XIV congress of Italian Society of Neurological Rehabilitation in 2013 “Study about motor performance improvement using a markerless system of movement capture based on a virtual platform for videogames”, Zoccolillo L, Iosa M, Gobbetti T, et al.

I won four research fellowships at Fondazione Santa Lucia (2003, 2004, 2005, 2008).

I am actually work-package leader of the Project “Symbitron” winner of financial support from the European Commission within the Seventh Framework Programme.

Scientific Publications

I have published more than 140 scientific papers on international scientific journals indexed in on scopus. My official H-index is 30 (scopus), with more than 2200 citations of my studies.

In the following a list (extracted by scopus) of 50 publications of mine, relevant in the field of human movement analysis:

Iosa, M., De Bartolo, D., Morone, G., Boffi, T., Mammucari, E., Vannozzi, G., Bini, F., Marinozzi, F., Antonucci, G., Paolucci, S.

Gait phase proportions in different locomotion tasks: The pivot role of golden ratio
(2019) Neuroscience Letters, 699, pp. 127-133.

Iosa, M., De Bartolo, D., Antonucci, G., Paolucci, S.

Movement and Numbers: The Mathematics Behind Motor Actions
(2019) Biosystems and Biorobotics, 21, pp. 591-595.

Iosa, M., Peppe, A., Morone, G., Bottino, S., Bini, F., Marinozzi, F., Paolucci, S.

Assessment of Waveform Similarity in Electromyographical Clinical Gait Data: The Linear Fit Method
(2018) Journal of Medical and Biological Engineering, 38 (5), pp. 774-781.

Iosa, M., De Sanctis, M., Summa, A., Bergamini, E., Morelli, D., Vannozzi, G.

Usefulness of magnetoinertial wearable devices in neurorehabilitation of children with cerebral palsy
(2018) Applied Bionics and Biomechanics, 2018, art. no. 5405680, .

Iosa, M., Morone, G., Paolucci, S.

Golden gait: An optimization theory perspective on human and humanoid walking
(2017) Frontiers in Neurorobotics, 11, art. no. 69, . Cited 1 time.

Iosa, M., Bini, F., Marinozzi, F., Fusco, A., Morone, G., Koch, G., Martino Cinnera, A., Bonni, S., Paolucci, S.

Stability and Harmony of Gait in Patients with Subacute Stroke
(2016) Journal of Medical and Biological Engineering, 36 (5), pp. 635-643. Cited 15 times.

Iosa, M., Picerno, P., Paolucci, S., Morone, G.

Wearable inertial sensors for human movement analysis
(2016) Expert Review of Medical Devices, 13 (7), pp. 641-659. Cited 45 times.

Iosa, M., Morone, G., Cherubini, A., Paolucci, S.

Iosa, M., Morone, G., Bini, F., Fusco, A., Paolucci, S., Marinozzi, F.

The connection between anthropometry and gait harmony unveiled through the lens of the golden ratio
(2016) Neuroscience Letters, 612, pp. 138-144. Cited 13 times.

Iosa, M., Morone, G., Fusco, A., Marchetti, F., Caltagirone, C., Paolucci, S., Peppe, A.

Loss of fractal gait harmony in Parkinson's Disease
(2016) Clinical Neurophysiology, 127 (2), pp. 1540-1546. Cited 12 times.

Iosa, M., Gizzì, L., Tamburella, F., Dominici, N.

Editorial: Neuro-motor control and feed-forward models of locomotion in humans
(2015) *Frontiers in Human Neuroscience*, 9 (JUNE), art. no. 306, 4 p. Cited 4 times.

Iosa, M., Zoccolillo, L., Montesi, M., Morelli, D., Paolucci, S., Fusco, A.

The brain's sense of walking: A study on the intertwine between locomotor imagery and internal locomotor models in healthy adults, typically developing children and children with cerebral palsy
(2014) *Frontiers in Human Neuroscience*, 8 (October), art. no. 859, 9 p. Cited 9 times.

Iosa, M., Cereatti, A., Merlo, A., Campanini, I., Paolucci, S., Cappozzo, A.

Assessment of waveform similarity in clinical gait data: The linear fit method
(2014) *BioMed Research International*, 2014, art. no. 214156, . Cited 14 times.

Iosa, M., Paradisi, F., Brunelli, S., Delussu, A.S., Pellegrini, R., Zenardi, D., Paolucci, S., Traballes, M.

Assessment of gait stability, harmony, and symmetry in subjects with lower-limb amputation evaluated by trunk accelerations
(2014) *Journal of Rehabilitation Research and Development*, 51 (4), pp. 623-634. Cited 21 times.

Iosa, M., Morelli, D., Nisi, E., Sorbara, C., Negrini, S., Gentili, P., Paolucci, S., Fusco, A.

Assessment of upper body accelerations in young adults with intellectual disabilities while walking, running, and dual-task running
(2014) *Human Movement Science*, 34 (1), pp. 187-195. Cited 8 times.

Iosa, M., Fusco, A., Morone, G., Paolucci, S.

Development and decline of upright gait stability
(2014) *Frontiers in Aging Neuroscience*, 6 (FEB), art. no. Article 14, . Cited 45 times.

Iosa, M., Fusco, A., Marchetti, F., Morone, G., Caltagirone, C., Paolucci, S., Peppe, A.

The golden ratio of gait harmony: Repetitive proportions of repetitive gait phases
(2013) *BioMed Research International*, 2013, art. no. 918642, . Cited 32 times.

Iosa, M., Morelli, D., Marro, T., Paolucci, S., Fusco, A.

Ability and stability of running and walking in children with cerebral palsy
(2013) *Neuropediatrics*, 44 (3), pp. 147-154. Cited 15 times.

Iosa, M., Fusco, A., Morone, G., Pratesi, L., Coiro, P., Venturiero, V., De Angelis, D., Bragoni, M., Paolucci, S.

Assessment of upper-body dynamic stability during walking in patients with subacute stroke
(2012) *Journal of Rehabilitation Research and Development*, 49 (3), pp. 439-450. Cited 45 times.

Iosa, M., Fusco, A., Morone, G., Paolucci, S.

Effects of visual deprivation on gait dynamic stability
(2012) *The Scientific World Journal*, 2012, art. no. 974560, . Cited 28 times.

Iosa, M., Morone, G., Fusco, A., Pratesi, L., Bragoni, M., Coiro, P., Multari, M., Venturiero, V., De Angelis, D., Paolucci, S.

Effects of walking endurance reduction on gait stability in patients with stroke
(2012) *Stroke Research and Treatment*, art. no. 810415, . Cited 34 times.

Iosa, M., Marro, T., Paolucci, S., Morelli, D.

Stability and harmony of gait in children with cerebral palsy
(2012) *Research in Developmental Disabilities*, 33 (1), pp. 129-135. Cited 41 times.

Iosa, M., Fusco, A., Morone, G., Paolucci, S.

Walking there: Environmental influence on walking-distance estimation
(2012) *Behavioural Brain Research*, 226 (1), pp. 124-132. Cited 26 times.

Iosa, M., Morelli, D., Nanni, M.V., Veredice, C., Marro, T., Medici, A., Paolucci, S., Mazzà, C.

Functional taping: A promising technique for children with cerebral palsy
(2010) *Developmental Medicine and Child Neurology*, 52 (6), pp. 587-589. Cited 17 times.

Iosa, M., Mazzà, C., Pecoraro, F., Aprile, I., Ricci, E., Cappozzo, A.

Control of the upper body movements during level walking in patients with facioscapulohumeral dystrophy

(2010) *Gait and Posture*, 31 (1), pp. 68-72. Cited 25 times.

Iosa, M., Mazzà, C., Frusciante, R., Zok, M., Aprile, I., Ricci, E., Cappozzo, A.
Mobility assessment of patients with facioscapulohumeral dystrophy
(2007) *Clinical Biomechanics*, 22 (10), pp. 1074-1082. Cited 28 times.

D'Antonio, E., Tieri, G., Paolucci, S., Patanè, F., Iosa, M.
Postural Sway Responses to 3D Virtual Dynamic Visual Stimulation in Post-stroke patients
(2019) *Biosystems and Biorobotics*, 21, pp. 783-787.

Aprile, I., Padua, L.L., Iosa, M., Gilardi, A., Bordieri, C., Frusciante, R., Russo, G., Erra, C., De Santis, F., Ricci, E.
Balance and walking in facioscapulohumeral muscular dystrophy: Multiperspective assessment
(2012) *European Journal of Physical and Rehabilitation Medicine*, 48 (3), pp. 393-402. Cited 9 times.

Belda-Lois, J.-M., Mena-Del Horno, S., Bermejo-Bosch, I., Moreno, J.C., Pons, J.L., Farina, D., Iosa, M., Molinari, M., Tamburella, F., Ramos, A., Caria, A., Solis-Escalante, T., Brunner, C., Rea, M.
Rehabilitation of gait after stroke: A review towards a top-down approach
(2011) *Journal of NeuroEngineering and Rehabilitation*, 8 (1), art. no. 66, . Cited 220 times.

Belluscio, V., Bergamini, E., Salatino, G., Marro, T., Gentili, P., Iosa, M., Morelli, D., Vannozzi, G.
Dynamic balance assessment during gait in children with Down and Prader-Willi syndromes using inertial sensors
(2019) *Human Movement Science*, 63, pp. 53-61. Cited 1 time.

Belluscio, V., Bergamini, E., Iosa, M., Tramontano, M., Morone, G., Vannozzi, G.
The iFST: An instrumented version of the Fukuda Stepping Test for balance assessment
(2018) *Gait and Posture*, 60, pp. 203-208. Cited 3 times.

Bergamini, E., Iosa, M., Belluscio, V., Morone, G., Tramontano, M., Vannozzi, G.
Multi-sensor assessment of dynamic balance during gait in patients with subacute stroke
(2017) *Journal of Biomechanics*, 61, pp. 208-215. Cited 10 times.

Fusco, A., Gallotta, M.C., Iosa, M., Morone, G., Iasevoli, L., Trifoglio, D., Saraceni, V.M., Paolucci, S., Baldari, C., Guidetti, L.
The dynamic motor imagery of locomotion is task-dependent in patients with stroke
(2016) *Restorative Neurology and Neuroscience*, 34 (2), pp. 247-256. Cited 5 times.

Fusco, A., Iosa, M., Gallotta, M.C., Paolucci, S., Baldari, C., Guidetti, L.
Different performances in static and dynamic imagery and real locomotion. An exploratory trial
(2014) *Frontiers in Human Neuroscience*, 8 (OCT), art. no. 760, 6 p. Cited 7 times.

Iannarilli, F., Vannozzi, G., Iosa, M., Pesce, C., Capranica, L.
Effects of task complexity on rhythmic reproduction performance in adults
(2013) *Human Movement Science*, 32 (1), pp. 203-213. Cited 5 times.

Koch, G., Bonni, S., Casula, E.P., Iosa, M., Paolucci, S., Pellicciari, M.C., Cinnera, A.M., Ponzo, V., Maiella, M., Picazio, S., Sallustio, F., Caltagirone, C.
Effect of Cerebellar Stimulation on Gait and Balance Recovery in Patients with Hemiparetic Stroke: A Randomized Clinical Trial
(2019) *JAMA Neurology*, 76 (2), pp. 170-178. Cited 4 times.

Lupo, A., Cinnera, A.M., Pucello, A., Iosa, M., Coiro, P., Personeni, S., Gimigliano, F., Iolascon, G., Paolucci, S., Morone, G.
Effects on balance skills and patient compliance of biofeedback training with inertial measurement units and exergaming in subacute stroke: A pilot randomized controlled trial
(2018) *Functional Neurology*, 33 (3), pp. 131-136. Cited 1 time.

Mazzà, C., Iosa, M., Picerno, P., Cappozzo, A.
Gender differences in the control of the upper body accelerations during level walking
(2009) *Gait and Posture*, 29 (2), pp. 300-303. Cited 45 times.

Mazzà, C., Iosa, M., Pecoraro, F., Cappozzo, A.
Control of the upper body accelerations in young and elderly women during level walking

(2008) Journal of NeuroEngineering and Rehabilitation, 5, art. no. 30, . Cited 60 times.

Morone, G., Girardi, S., Ghanbari Ghoshchy, S., Iosa, M., Paolucci, S.
Wearable Devices and Virtual Reality for Neurorehabilitation: An Opportunity for Home Rehabilitation
(2019) Biosystems and Biorobotics, 21, pp. 601-605.

Morone, G., Annicchiarico, R., Iosa, M., Federici, A., Paolucci, S., Cortés, U., Caltagirone, C.
Overground walking training with the i-Walker, a robotic servo-assistive device, enhances balance in patients with subacute stroke: A randomized controlled trial
(2016) Journal of NeuroEngineering and Rehabilitation, 13 (1), art. no. 47, . Cited 8 times.

Morone, G., Iosa, M., Marinozzi, F., D'Antonio, E., Poli, P., Masiero, S., Molinari, M., Paolucci, S.
Effectiveness of robotic assisted walking therapy: The role of age and sex
(2014) Biosystems and Biorobotics, 7, pp. 569-573.

Serrao, M., Chini, G., Iosa, M., Casali, C., Morone, G., Conte, C., Bini, F., Marinozzi, F., Coppola, G., Pierelli, F., Draicchio, F., Ranavolo, A.
Harmony as a convergence attractor that minimizes the energy expenditure and variability in physiological gait and the loss of harmony in cerebellar ataxia
(2017) Clinical Biomechanics, 48, pp. 15-23. Cited 13 times.

Summa, A., Vannozzi, G., Bergamini, E., Iosa, M., Morelli, D., Cappozzo, A.
Multilevel upper body movement control during gait in children with cerebral palsy
(2016) PLoS ONE, 11 (3), art. no. e0151792, . Cited 11 times.

Tamburella, F., Scivoletto, G., Iosa, M., Molinari, M.
Reliability, validity, and effectiveness of center of pressure parameters in assessing stabilometric platform in subjects with incomplete spinal cord injury: A serial cross-sectional study
(2014) Journal of NeuroEngineering and Rehabilitation, 11 (1), art. no. 86, . Cited 12 times.

Tamburella, F., Scivoletto, G., Iosa, M., Molinari, M.
Centre of pressure assessment in subjects with incomplete spinal cord injury: Preliminary data of reliability, validity and effectiveness
(2014) Biosystems and Biorobotics, 7, pp. 781-787.

Tramontano, M., Bergamini, E., Iosa, M., Belluscio, V., Vannozzi, G., Morone, G.
Vestibular rehabilitation training in patients with subacute stroke: A preliminary randomized controlled trial
(2018) NeuroRehabilitation, 43 (2), pp. 247-254.

Tramontano, M., Medici, A., Iosa, M., Chiariotti, A., Fusillo, G., Manzari, L., Morelli, D.
The effect of vestibular stimulation on motor functions of children with cerebral palsy
(2017) Motor Control, 21 (3), pp. 299-311. Cited 3 times.

Velasco, M.A., Raya, R., Muzzioli, L., Morelli, D., Otero, A., Iosa, M., Cincotti, F., Rocon, E.
Evaluation of cervical posture improvement of children with cerebral palsy after physical therapy based on head movements and serious games
(2017) BioMedical Engineering Online, 16, art. no. 74, .

Velasco, M.A., Raya, R., Muzzioli, L., Morelli, D., Iosa, M., Cincotti, F., Rocon, E.
Evaluation of cervical posture improvement of children with cerebral palsy after physical therapy with a HCI based on head movements and serious videogames
(2016) Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), 9656, pp. 495-504. Cited 1 time.

Zago, M., Bosco, G., Maffei, V., Iosa, M., Ivanenko, Y.P., Lacquaniti, F.
Internal Models of Target Motion: Expected Dynamics Overrides Measured Kinematics in Timing Manual Interceptions
(2004) Journal of Neurophysiology, 91 (4), pp. 1620-1634. Cited 125 times.

Rome, 22nd September 2020

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