

Curriculum Vitae Simona Ferrante

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RESEARCH ID: K-4122-2016

ACADEMIC PROFILE

Education

- October 2006 PhD qualification. Title PhD thesis: "Neuroprosthesis for the rehabilitation of neurological patients: from control strategies design to clinical applications" Advisors: G Ferrigno A Pedrocchi.
- December 2002 Master degree (100/100 laude) in Biomedical Engineering, Politecnico di Milano. Title: "Neural control of the functional electrical stimulation to assist knee flexion-extension movements".

Faculty appointments

- From 2nd April 2020 to now Associate Professor at the Department of Electronics, Information and Bioengineering (DEIB), Politecnico di Milano
- From 2nd November 2016 to March 2020 Assistant professor at the DEIB, Politecnico di Milano type "b" contracts (senior researcher) pursuant to art. 24, paragraph 3 of Law n. 240 issued on 2.11.2016.
- From 1st December 2012 to 1st November 2016 Assistant professor at the DEIB, Politecnico di Milano type "a" contracts (junior researcher) pursuant to art.24, paragraph 3 of Law n. 240 issued on 30.12.2010.
- National Scientific Qualification as Full Professor (art. 16, comma 1, Legge 240/10) was issued on the 18/11/2020 and it is valid till the 18/11/2031.

Honours and Awards

- From 2023: In the framework of the Joint Research Platform between Politecnico di Milano e Fondazione IRCCS Istituto Neurologico Carlo Besta, I'm responsible of the LEARN Lab, and I received the affiliation from the Istituto Neurologico C. Besta.
- From 2020: President of the International Functional Electrical Stimulation Society www.ifess.org
- 2020 Switch to Product Innovation challenge – XII edition, Award for the project "ThInkPen" (TeleHealth Ink Pen) - € 30000
- 2013: Basic Science Award for the contribution titled "EMG-based eye blink detection system for closed loop facial pacing" Combined Otolaryngology Springs Meetings, Orlando FL.
- 2007: Europa Medico Physica Award for the best contribution submitted and presented at the XXXV national congress SIMFER.
- 2005: Vodovnik Award for the best student contribution submitted and presented at the 10th IFESS Annual Conference in Montreal.
- 2003: Award for the best master thesis sponsored by the Scuola di Bressanone di Bioingegneria.

International research experiences

- June 2004 – October 2004 University College of London, Implanted Device Group del Department of Medical Physics & Bioengineering "Optimization of the stimulation strategy to induce mobile FES cycling in individuals with Spinal Cord Injury"
- June 2005 – September 2005 Max Plank Institute, Magdeburg, Germania. "Evaluation of the use of variable frequency trains of stimulation during FES cycling"; the idea was tested both on healthy subjects and on stroke patients and the results were published in Neuromodulation.

Responsability of research groups

- Coordination of the LEARN lab - Laboratory of E-Health Technologies and Artificial Intelligence Research in Neurology together with Domenico Aquino (Besta). The laboratory is aimed at creating digital solutions for the decentralised assessment and monitoring of patients suffering from neurological diseases. It will use Artificial Intelligence algorithms to identify neurophysiological, neuroradiological and clinical biomarkers contributing to the process of differential diagnosis and individual therapies.
- Coordination of the working group on e-health at the NearLab of the Electronics, Information and Bioengineering Department, Politecnico di Milano. The group includes 1 post doc (Linda Greta Dui), 5 PhD student (Simone Toffoli, Chiara Piazzalunga, Alice Donati, Alice Taborelli, Yin Lin) and several students.
- Setting up of the Active3 Lab for inclusive physical activity at the primary school, Polo Territoriale di Lecco, Politecnico di Milano.

Organization of scientific events

- November 2024: Organizer of a Workshop at ICNR 2024 in La Granja Madrid. Title: "Digital medicine in neurorehabilitation" <https://2024.icneurorehab.org/workshops/>.
- Since 2020: Organization of the IFESS conferences, scientific and program committee and support to the local organizers.
- September 2023: Co-organizer of a Workshop at Rehabweek 2023 in Singapore. Title: "Hybrid FES robotics: from design challenges to clinical perspectives".
- September 2022: Invited lecture at the congress SIREM (Società Italiana di Ricerca sull'Educazione Mediale) 2022 titled "Tecnologie innovative al servizio della scuola primaria: come supportare lo screening precoce dei disordini dell'apprendimento".
- 2016 Organization of the special session titled "RETRAINER workshop with hands on" during the 12th Vienna International Workshop on FES <http://2016.fesworkshop.org>
- 2016 Organization of the workshop titled "Functional Electrical Stimulation (FES): how to best utilize it in clinical practice" during the conference IFESS 2016 Hybrid approaches of FES, Montpellier, France; Lecture titled "FES Cycling Systems: from operation principles to the design of evidence based treatments" and hands on session on mobile and stationary FES cycling systems. <http://ifess2016.inria.fr/program/workshop-june-7th/>
- 2012: Organization of the workshop titled "Modeling E-Health Processes by the Unified Modeling Language" 28th August, during the 34th International Conference IEEE Engineering in Medicine and Biology Society (EMBC) 2012 at San Diego. <http://ieeexplore.ieee.org/document/6345850/>

Patents

- Since 2020, WO2020007802; Title "SYSTEM FOR DETECTION AND KINEMATIC MONITORING OF BODY MOVEMENTS IN WATER, AND RELATIVE METHOD" The patent was assigned to Forst SPA.
- Since 2020, 102020000006793, Patent title "STRUMENTO DI SCRITTURA, SISTEMA E METODO PER IL MONITORAGGIO E L'ANALISI TRASPARENTE DELLA SCRITTURA", Application n. 10202000000679. In 2021 PCT extension PCT/IB2021/052648.

TEACHING ACTIVITIES AT POLITECNICO DI MILANO

Teaching activities for the school of Biomedical Engineering

- e-Health Methods -5 ECTS (from 2017/18 to today, except 2018/19 for maternity leave)
- Capstone Projects -5 ECTS (from 2021 to today, 3 editions)
- Riabilitazione Motoria - 5ECTS (from 2024/25)
- Project [Information] (from 2016/17 on) - bachelor's degree
- Medical Informatics [2] -5 ECTS (3 editions 2014/15, 2015/2016 2016/17)
- Informatica Medica [2] -5 ECTS (4 editions 2013/14, 2012/13, 2011/12, 2010/11)

Teaching activities for the PhD School in Bioengineering

- Electronics technologies in biomedical engineering - 5ECTS (from 2011/12 to today - every 2 years)

Other Teaching activities

Responsible of a module of the [Master RehabTech](#) of Politecnico di Milano

- April 2023: Module Title: Digital technologies at the service of people with potential or real learning difficulties: from the clinical need to usable and adopted solutions.
- February 2021: Module Title "Tecnologie innovative al servizio delle persone con potenziali o reali difficoltà nell'apprendimento: dal bisogno clinico alla soluzione fruibile"
- 7th October 2021 Responsible of a lecture of the Master in Advanced Technologies in Rehabilitation (MATR) - Humanitas University - Title of the lecture "Functional Electrical Stimulation"

Advisor of students and PhD

Advisor of 8 PhD students in bioengineering, co-advisor of 4 Phd Students in bioengineering, Advisor of more than 60 master's degree students in bioengineering and about 5 in Engineering in computing systems

INSTITUTIONAL ACTIVITIES AND SERVICES

- From 2017 to 2021: member of the academic staff of the Phd in Bioengineering at Politecnico di Milano
- Since 2020: member of the Board for Exchange mobility at Biomedical Engineering, Politecnico di Milano
- Since 2020: member of the Board for the Open Day at Biomedical Engineering, Politecnico di Milano

RESEARCH PROJECTS AND FUNDINGS

Principal investigator or responsible of POLIMI research unit in research projects

- 2025-2027 “Dimmil”, PROGRAMMA REGIONALE FESR 2021-2027, Bando Collabora e Innova, Pi Xenia Reply, Approved Budget Polimi 421.817,09 €
- 2023-2025 “A digital school eco-system for early detection and training of learning difficulties in the writing domain: e-School 2.0” PRIN (Relevant National Interest Projects), funded by the Ministry of University and Research, PI Ferrante Simona, Approved Budget € 215000
- 2020-2023 “ESSENCE: Empathic platform to personally monitor, Stimulate, enrich, and assist Elders and Children in their Environment” Innovation Action, H2020-EU.3.1., SC1-PHE-CORONAVIRUS-2020-2B; GA: 101016112; PI Ferrante Simona Budget € 3 204 573,50;
<https://cordis.europa.eu/project/id/101016112>
- 2018-2023 “Pilot Study on sleep pathologies treatments in patients with Vegetative and Minimally Conscious State diagnosis for improving Consciousness level: the STRIVE project” project funded by the Italian Ministry of Health, Project Code: GR-2016-02365049 Responsible of the Research Unit Politecnico di Milano: S FERRANTE Budget € 425.018,00
- 2017-20 “MOVECARE, Multiple-actOrs Virtual Empathic CAREgiver for the Elder”, Research Innovation Action, H2020-ICT-2016-1, GA 732158, PI Prof Borghese UNIMI Budget €5933611,25; Responsible of the Research Unit Politecnico di Milano: S FERRANTE http://cordis.europa.eu/project/rcn/206414_en.html
- 2012-2016: “Fall prevention and locomotion recovery in post-stroke patients: a multimodal training towards a more autonomous daily life”, project funded by the Italian Ministry of Health, Project Code: GR-2010-2312228, PI Simona Ferrante, Funded Institution Fondazione S Maugeri, Scientific Institute of Lissone

Participation in research projects (selection)

- 2023-2028 IBeCHANGE - Addressing psychosocial and lifestyle risk factors to promote primary cancer prevention: an integrated platform to promote behavioural change, GA 101136840, PI Istituto Europeo di Oncologia
- 2022-2025 Active³ - Everyone, Everywhere, Everyday, Funded by Fondazione Cariplo and Regione Lombardia – WP1 A platform for sports inclusivity at school.
- PNRR Multilayer Urban Sustainability Action (MUSA), Spoke 2 Big data e open data per le scienze della vita – participation on the activities on the screening of learning disorders in primary schools (WP4)
- 2023-2027 Cal.hub.ria CALabria HUB per Ricerca Innovativa ed Avanzata, POS Ministry of Health – Attività OS8 AT5
- 2015-18: RETRAINER REaching and grasping Training based on Robotic hybrid Assistance for Neurological patients: End users Real life evaluation, INNOVATION ACTION, Information and Communication Technologies, H2020-ICT-2014-1, ICT-23-2014: Robotics, GA 644721, PI Abacus

BIBLIOMETRIC SCORES OF PUBLICATIONS ON ISI JOURNALS

(Scopus export date 03/10/2025)

H-Index: 34

Total number of works: 185

Total number of citations: 3616

COMPLETE LIST OF PUBLICATIONS ON SCIENTIFIC JOURNALS

https://re.public.polimi.it/browse?filter_value_display=FERRANTE%2C+SIMONA&type=author&offset=0&authority=rp01726&sort_by=2&order=DESC&rpp=100&submit_browse=Aggiorna

I authorize processing of personal data contained in this Curriculum Vitae according to art. 13 Legislative Decree June 30, 2003 No. 196 - "Code Regarding the Protection of Personal Data" and art. 13 GDPR 679/16 - "European Regulation on the Protection of Personal Data".

Milano, 03/10/2025