Alessandro Mengarelli, Ph.D.

Postdoctoral Researcher

Education

2017, Università Politecnica delle Marche
Ph.D. in Information Engineering

2012, Università Politecnica delle Marche
MEng in Biomedical Engineering. Final grade: 110/110

2008, Università Politecnica delle Marche
BS in Biomedical Engineering. Final grade: 106/110

Experience

February 2022 - present
Postdoctoral Researcher, Department of Information Engineering, Università Politecnica delle Marche

Project title: Investigation of postural control dynamics through non-linear analysis of time-series.

February 2020 - January 2022
Postdoctoral Researcher, Department of Information Engineering, Università Politecnica delle Marche

Project title: Analysis of movement signals from wearable devices.

December 2018 - November 2019
Postdoctoral Researcher, Department of Information Engineering, Università Politecnica delle Marche

Project title: Identification of parameters suitable to test the brain oxygenation levels in divers by NIRS technology.

September 2017 - August 2018
Postdoctoral Researcher, Department of Information Engineering, Università Politecnica delle Marche

Project title: Motor control in balance maintenance and locomotion.

Professional Skills

- Acquisition, elaboration, and analysis of biological signals
- Capability of managing the experimental setup for bio-signals acquisition in a movement analysis laboratory
- Experience in handling experimental setup with pathological subjects
- Mathematical modeling of biological systems
- Experience in dealing with kinematic, kinetic, EMG, and inertial data
- Software development for bio-signals processing
- Non linear timeseries analysis
- Optimal filtering and smoothing
- Systems identification

Software Development Skills

Programming
- Shell
- Python
- Matlab

Language Skills

Mother tongue
Italian

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Others

English

- Understanding
    - Listening: B2
    - Reading: C1
- Speaking
    - Interaction: B1
    - Production: B1
- Writing: C1

Memberships

- Member of the Institute of Electrical and Electronics Engineering (IEEE)
- Member of the IEEE Engineering in Medicine and Biology Society (EMBS)
- Member of the IEEE Consumer Electronics Society
- Member of the IEEE Robotics and Automation Society (RAS)
- Member of the IEEE Systems, Man, and Cybernetics Society (SMCS)
- Founding Member of the Italian Group of Bioengineering (Gruppo nazionale di bioingegneria, GNB)
- Junior Fellow of the Interuniversity Centre of Bioengineering of the Human Neuromusculoskeletal System (IUC-BOHNES)

Conferences and Symposia

2021

Attendance as speaker at the IEEE-EMBS International Conference on Biomedical and Health Informatics (BHI'21).

2019

Attendance as speaker at the 41th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Berlin, Germany.

Attendance as speaker at the 23rd IEEE International Symposium on Consumer Technologies (ISCT), Ancona, Italy.

2018

Attendance as speaker at the World Congress on Medical Physics & Biomedical Engineering, Prague, Czech Republic.

2016

Attendance as speaker at the 38th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Orlando, Usa.

2015

Attendance as speaker at the 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Milano, Italy.

Attendance as speaker at the 12th Workshop on Intelligent Solutions in Embedded Systems (WISES), Ancona, Italy.

2014

Attendance as speaker at the Workshop on Mobile Networks for Biometric Data Analysis (mBiDA), Ancona, Italy.

Attendance as speaker at the 10th IEEE/ASME International Conference on Mechatronic and Embedded Systems and Applications (MESA), Senigallia, Italy.

2013

Attendance as speaker at the XIV Congresso Associazione Italiana Analisi del Movimento in Clinica (SIAMOC), Pisa, Italy.

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Scientific and technical roles

2022
Member of the Program Committee of the 8th International Conference on Time Series and Forecasting (ITISE 2022), Gran Canaria, Spain.

Member of the TCP (Technical Program Committee) of the 14th International Conference on eHealth, Telemedicine, and Social Medicine (eTELEMED 2022), Porto, Portugal.

Member of the TCP (Technical Program Committee) of Zooming Innovation in Consumer Technologies Conference (ZINC), Novi Sad, Serbia.

2021 - present
Member of the Technical Committee on "Consumer Systems for Healthcare and Wellbeing" of the IEEE Consumer Technology Society.

Member of the Technical Committee on "Human-Machine Interaction and User Experience" of the IEEE Consumer Technology Society.

2021
Member of the TCP (Technical Program Committee) of Zooming Innovation in Consumer Technologies Conference (ZINC), Novi Sad, Serbia.

2020
Member of the TCP (Technical Program Committee) of the 10th IEEE International Conference on Consumer Electronics (ICCE), Berlin, Germany.

Member of the TCP (Technical Program Committee) of Zooming Innovation in Consumer Technologies Conference (ZINC).

2019
Member of the TCP (Technical Program Committee) of the 23rd IEEE International Symposium on Consumer Technologies (ISCT), Ancona, Italy.

Member of the TCP (Technical Program Committee) of the 9th IEEE International Conference on Consumer Electronics (ICCE), Berlin, Germany.

Teaching Assignments

2022
Teaching assignment of "Dynamical Modelling of Movement" (course of Biomedical Engineering, Università Politecnica delle Marche.)

2021
Teaching support assignment in Industrial Automation (Course of Management Engineering, Università Politecnica delle Marche).

Teaching support assignment in Modeling and Optimization for Industrial Processes (Course of Management Engineering, Università Politecnica delle Marche).

2020
Teaching support assignment in Industrial Automation (Course of Management Engineering, Università Politecnica delle Marche).

Teaching support assignment in Modeling and Optimization for Industrial Processes (Course of Management Engineering, Università Politecnica delle Marche).

2019
Teaching support assignment in Industrial Automation (Course of Management Engineering, Università Politecnica delle Marche).

Teaching support assignment in Automatic Control (Courses of Biomedical and Electronic Engineering, Università Politecnica delle Marche).

2018
Teaching support assignment in Industrial Automation (Course of Management Engineering, Università Politecnica delle Marche).

2015
Teaching assignment for the professional course "Menti Attive in Riabilitazione: la Ricerca in Riabilitazione nelle Marche", Osimo, Italy.

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Academic tutoring

2018-2022
Co-tutor of one Ph.D. student (Course of Information Engineering).

2016 - present
Co-tutor of 45 theses (BS and MS degree).

Certifications

2020 - License to practice
Admission to practice the Engineering profession. Final grade 190/200.

Awards

2019 - Outstanding paper award
Awarded with the outstanding paper award at the 23rd IEEE International Symposium on Consumer Technologies (ISCT, Ancona, Italy) as a co-author of the paper entitled "Evaluation of a New Wearable Technology for Kinematic Analysis During Perturbed Posture".

2018 - Best Ph.D. thesis award
Second place at the award in memory of the Ing. Salvatore Valenti for the best Ph.D. thesis.

2017 - eCapital Contest
Shortlisted for the eCapital contest, with the project "Track@Home", focused on the home tracking of movement in elderly with inertial sensors.

Scientific publications

2014 - present
Author and co-author of more than 60 peer-reviewed documents, published as journal papers, conference proceedings and book chapters.

Editorial roles

2022, *Guest Editor*
Guest Editor for the special issue entitled "Recent Trends of Wearable Sensors for Biomechanics Analysis and Physiological State Function Assessment", in *Sensors* journal (MDPI).

2021 - present, *Editorial Board Membership*
Member of the Editorial Board of *Data in Brief* journal (Elsevier).

2021 - present, *Advisory Panel*
Member of the Topical Advisory Panel for the *Sensors* journal (MDPI).

2021, *Guest Editor*
Guest Editor for the special issue entitled "Neuromuscular Control Modelling of Static and Dynamic Balance Maintenance", in *Frontiers in Neurology* journal.

Guest Editor for the special issue entitled "Neuromuscular Control Modelling of Static and Dynamic Balance Maintenance", in *Frontiers in Bioengineering and Biotechnology* journal.

2021, *Guest Editor*
Guest Editor for the special issue entitled "New Challenges in Biomedical Signal Processing: Computational Theory and Applications", in *Electronics* journal (MDPI).

2020, *Guest Editor*
Guest Editor for the special issue entitled "New Perspectives in Instrumental Balance Assessment", in *Applied System Innovation* journal (MDPI).

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2019, *Lead Guest Editor*
Lead Guest Editor for the special issue entitled "Inertial Measurement Units for Human Body Monitoring, Healthcare, and Sports", in *Journal of Healthcare Engineering* (Hindawi).

Interests

Professional

Movement analysis, Human balance assessment, Human balance modeling, Signal processing, Low-cost devices for physiological data recording, Inertial sensing, Data analysis, Applied control theory, Non linear analysis of biological timeseries.

Autorizzo il trattamento dei dati personali contenuti nel mio curriculum vitae e la sua pubblicazione sul web in base all'art. 13 GDPR 679/16.

In compliance with the Italian Legislative Decree no. 196 dated 30/06/2013, I hereby authorize the recipient of this document to use and process my personal details for the purpose of recruiting and selecting staff and I confirm to be informed of my rights in accordance to art. 7 of the above mentioned decree.