



Emanuela Rotondo

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RESEARCH EXPERIENCE

[07/2025 – 10/2025]

Research Contract | Fondazione Santa Lucia IRCCS

Research activity at the Neuroelectrical Imaging and BCI Laboratory (NEILab) within the project "AT-BCI: Endowing mainstream Assistive Technology solutions with Brain Computer Interfaces for personalized access to digital communication and interaction in people with severe motor disability".

[02/2025 – 06/2025]

Research Scholarship | Sapienza University of Rome

Research activity within the project "INTER-RO-GAIT. Patient-therapist INTERaction during RObotic GAIT rehabilitation after Spinal Cord Injury: clinical, instrumental and hyperscanning study".

[11/2024 – 12/2024]

Research Scholarship | Fondazione Santa Lucia IRCCS

Research activity at the Neuroelectrical Imaging and BCI Laboratory (NEILab) within the project "INTER-RO-GAIT. Patient-therapist INTERaction during RObotic GAIT rehabilitation after Spinal Cord Injury: clinical, instrumental and hyperscanning study".

EDUCATION AND TRAINING

PhD Student in Automatic Control, Bioengineering and Operations Research (ABRO)

Sapienza University of Rome [11/2025 – Current]

Curriculum: Bioengineering

Research Interests and Activities:

- Acquisition and analysis through advanced signal processing techniques of multimodal signals (EEG, EMG, eye-tracking) of healthy and pathological individuals
- Development of BCI-based interventions for neurorehabilitation

Internship Student at NEILab

Fondazione Santa Lucia IRCCS [03/2024 – 10/2024]

Master's Degree in Biomedical Engineering

Sapienza University of Rome [09/2022 – 10/2024]

Final grade: 110/110 cum laude | **Thesis:** Development and implementation of an EEG signal processing algorithm to resolve P300 latency jitter in patients with Disorders of Consciousness

Bachelor's Degree in Clinical Engineering

Sapienza University of Rome [09/2019 – 07/2022]

Final grade: 110/110 cum laude | **Thesis:** Microdosimetric study of the electroporation of a stem cell exposed in a system with flat parallel electrodes

HONOURS AND AWARDS

[2025] Italian National Bioengineering Group

Award for the best Master's thesis in Bioengineering

PUBLICATIONS

[2026]
Investigating the impact of visual-motor priming on cortical excitability during a simple hand motor task
E. Rotondo, F. Patarini, F. Pichiorri, E. Colamarino, C. Maronati, J. Manuello, A. Cavallo, F. Cincotti, D. Mattia, J. Toppi, *Summer School on Neurorehabilitation, June 7-12, 2026, Baiona, Spain*

[2026]
Improving P300 morphology through single-trial latency realignment: a comparative study of template-matching approaches
I. Quattrociochi, V. Caracci, **E. Rotondo**, E. Colamarino, F. Pichiorri, A. Riccio, F. Cincotti, J. Toppi, L. Astolfi, *Journal of Neural Engineering*

[2025]
Assessing short- and medium-term fluctuations of EEG spectral content in Minimally Conscious State patients
I. Quattrociochi, A. Riccio, V. Caracci, V. Galiotta, M. D'Ippolito, **E. Rotondo**, F. Pichiorri, F. Cincotti, R. Formisano, J. Toppi, D. Mattia, *47th Annual International Conference of the IEEE EMBS, July 14-17, 2025, Copenhagen, Denmark*

[2025]
The variability of EEG spectral measures in MCS: towards a multidimensional characterization of the awareness fluctuations
I. Quattrociochi, A. Riccio, V. Caracci, V. Galiotta, M. D'Ippolito, **E. Rotondo**, F. Pichiorri, F. Cincotti, J. Toppi, D. Mattia, *11th International BCI Meeting, June 2-5, 2025, Banff, Canada*

SKILLS

Programming/Software

MATLAB / Python / Psychtoolbox / EEGLAB / BrainVision Recorder / BrainVision Analyzer / Tobii Pro Lab / Cometa Systems / Xsens MVN / COMSOL Multiphysics / Sim4Life

Multimodal signal acquisition

EEG, EMG, Eye-Tracking and Kinematic data

Language skills

Italian (mother tongue) / English / Spanish

ACADEMIC ACTIVITY

Co-supervisor of a Master's thesis in Biomedical Engineering

I give consent to process my personal data, with the purpose of the recruitment process, in accordance to the Legislative Decree n°196/03 and to art. 13 GDPR 679/16 UE Regulation, regarding the protection of personal data

Rome, 30/07/2026

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