

CURRENT POSITION SSD (if applicable)	Senior Researcher FIS/02, FIS/07, BIO/09	
RESEARCH TOPICS / EXPERIENCES	<ul style="list-style-type: none"> • Nonlinear dynamics and statistical mechanics of neuronal networks • Digital twins of living systems • Population dynamics of networks of spiking neurons • Implementation of neuronal models in neuromorphic hardware. • Analysis and modelling of in-vivo and in-vitro neurophysiological data 	
SCIENTIFIC / TECHNICAL QUALIFICATION (source: Scopus)	• h-index:	• 24
	• No. publications:	• 64
	• No. citations:	• 2165
THEMATIC AREA KEYWORDS <i>(it is possibile to select one or more than one thematic area)</i>	<ul style="list-style-type: none"> • Complex systems & health • Physics of living systems 	<ul style="list-style-type: none"> • Computational and systems neuroscience • Disorders of consciousness • Brain-machine interface • Modelling brain functions • Digital twins of brain networks • Statistical physics of biological systems

EDUCATION AND TRAINING

2010/01	PhD in Neurophysiology Sapienza University of Rome, Rome (Italy)
1997/03	Laurea degree (MSc) in Physics (Magna cum Laude) Sapienza University of Rome, Rome, Italy

WORK EXPERIENCE

since 2021/01	Senior Researcher (Primo Ricercatore II livello) Istituto Superiore di Sanità (Italian National Institute of Health), Rome (Italy)
from 2002/03 to 2021/01	Researcher (Ricercatore III livello) Istituto Superiore di Sanità (Italian National Institute of Health), Rome (Italy)
from 2006/06 to 2006/08	Scientific research collaborator Institute of Neuroinformatics (INI), UNI-ETH, Zurich (Switzerland)
from 1998/09 to 2002/01	Post-doc researcher Istituto Superiore di Sanità (Italian National Institute of Health), Rome (Italy)
from 1997/12 to 1998/08	Post-doc researcher Department of Physics, University of Genoa, Genoa (Italy)

from 1997/10 to 1997/12	Scientific collaborator
	Istituto Superiore di Sanità (Italian National Institute of Health), Rome (Italy)

SERVICE TO NATIONAL AND INTERNATIONAL COMMUNITY

From 2022	<ul style="list-style-type: none"> Associate Editor of "Journal of Computational Neuroscience" (Springer Nature, e-ISSN: 1662-5188)
From 2019	<ul style="list-style-type: none"> Associate Editor of "Frontiers in Computational Neuroscience" (Frontiers Media SA, e-ISSN: 1662-5188)
From 2019	<ul style="list-style-type: none"> Guest Associate Editor of "Frontiers in Systems Neuroscience" (Frontiers Media SA, e-ISSN: 1662-5137).
From 2019	<ul style="list-style-type: none"> Guest Editor of "PLoS Computational Biology" (Public Library Science, e-ISSN: 1553-7358).
From 2018	<ul style="list-style-type: none"> Guest Editor of "Neural Computation" (MIT Press, ISSN: 0899-7667).

TEACHING EXPERIENCE

From 2024/04	<ul style="list-style-type: none"> Member of the teaching board of the PhD in "Bioinformatic and Computational Biology" Department of Biochemical Science of "Sapienza" University of Rome (Italy)
From 2019/09	<ul style="list-style-type: none"> Adjunct Professor of "Neural Networks" (6 CFU, 60 ore) Corso di Studio in Fisica (FIS/02) per la Laurea Magistrale in Fisica (LM-17). Department of Physics of "Sapienza" University of Rome, Rome (Italy)
From 2020	<ul style="list-style-type: none"> Faculty member of the "The European Institute for Theoretical Neuroscience" Paris (France).

MAIN RESEARCH EXPERIENCE

2024/09	<ul style="list-style-type: none"> Co-organizer of the "1st Conference of the Italian Network for Computational Neuroscience," Istituto Superiore di Sanità, Roma (Italy) – 23-25 Sep. '24.
2024/09	<ul style="list-style-type: none"> Co-organizer of "ANEIS – Applied Neurosciences School: Linking Neurotechnology to clinics" EBRAINS-Italy, Ventotene (Italy) – 8-14 Sep. '24.
From 2024 to 2025	<ul style="list-style-type: none"> NEMUS - Neurological Exploration through the Modeling of the Unconscious State. MNESYS Spoke 6, Open Call PE00000006, Topic (i). Principal investigator of Research Unit.
From 2022 to 2025	<ul style="list-style-type: none"> EBRAINS-Italy –European Brain ReseArch InfrastructureS-Italy. 2022CALL_PNRR:M4/C2/L3.1.1. Principal investigator of Research Unit.
From 2021 to 2025	<ul style="list-style-type: none"> "Intra- and Inter-Areal Communication in Primate Brain Networks (In2PrimateBrains)". European Commission, Horizon 2020, Call: H2020-MSCA-ITN-2019. Grant agreement n. 956669. Collaborator.
From 2020/04 to 2023/03	<ul style="list-style-type: none"> The Human Brain Project – Special Grant Agreement 3 (HBP-SGA3). European Commission, Horizon 2020, Call: H2020-SGA-FETFLAG-HBP-2019; Topic: SGA-FETFLAG-HBP-2019; Type of action: SGA-RIA. Grant agreement n. 945539. Principal investigator of Research Unit

From 2018/03 to 2020/03	<ul style="list-style-type: none"> The Human Brain Project – Special Grant Agreement 2 (HBP-SGA2). European Commission, Horizon 2020, Call: H2020-SGA-FETFLAG-HBP-2017; Topic: SGA-FETFLAG-HBP-2017; Type of action: SGA-RIA. Grant agreement n. 785907. Principal investigator of Research Unit
From 2016/03 to 2018/03	<ul style="list-style-type: none"> The Human Brain Project – Special Grant Agreement 1 (HBP-SGA1): WP 3.2 WAVE SCALing Experiments and Simulations (WaveScalES). European Commission, Horizon 2020, Call: H2020-Adhoc-2014-20; Topic: FET FLAGSHIP; Type of action: SGA-RIA. Grant agreement n. 720270. Principal investigator of Research Unit

OTHER RELEVANT EXPERIENCES

From 1999/02 to 2003/12	<ul style="list-style-type: none"> Scientific fellowship with the Group V of the National Institute of Nuclear Physics (INFN), at the Structure of Rome I.
	<ul style="list-style-type: none"> Evaluator for several national and international projects.
	<ul style="list-style-type: none"> Supervisor for 16 'laurea' (MSc) theses and for 11 PhD theses.

ADDITIONAL INFORMATION

- Publications 5 most relevant publications (* co-senior authors)
- DiAntonio G., Raglio S., **Mattia M.** (2024). *A geometrical solution underlies general neural principle for serial ordering.* Nat. Commun. 15: 8238. DOI: 10.1038/s41467-024-52240-6
 - Vinci G. V, Benzi R., **Mattia M.** (2023). *Self-consistent stochastic dynamics for finite-size networks of spiking neurons.* Phys. Rev. Lett. 130: 097402. DOI: 10.1103/PhysRevLett.130.097402
 - Pani P., Giamundo M., Giarocco F., Mione V., Fontana R., Brunamonti E., **Mattia M.***, Ferraina S.* (2022). *Neuronal population dynamics during motor plan cancellation in nonhuman primates.* Proc. Natl. Acad. Sci. USA 119: 774307. DOI: 10.1073/pnas.2122395119
 - Tort-Colet N., Capone C., Sanchez-Vives M.V., **Mattia M.** (2021). *Attractor competition enriches cortical dynamics during awakening from anesthesia.* Cell Rep., 35: 109270. DOI: 10.1016/j.celrep.2021.109270
 - Sanchez-Vives M. V., Massimini M., **Mattia M.** (2017). *Shaping the default activity pattern of the cortical network.* Neuron. 94: 993–1001. DOI: 10.1016/j.neuron.2017.05.015