Fabio LA FORESTA, Ph.D.

Associate Professor of Electrical Engineering

Fabio La Foresta received his MS Degree (summa cum laude) in Electronic Engineering at the University of Messina in 1998 with the thesis "Study of the Electromagnetic Diffraction Phenomena through the Finite Element Method". In 1998 he has been a visiting research at the French Research Institute ISEN to develop the project "Design and Simulation of a fuzzy control system". From 2000 to 2003 he has been a PhD fellow in "Advanced Technologies for Computer Science" at the University of Messina. From 2003 to 2005 he has been a Post-Doctoral Researcher in Biomedical Engineering at the *Mediterranea* University of Reggio Calabria. In 2004 he received his PhD from the University of Messina with the dissertation: "Advanced Algorithms for Multidimensional and Multiresolution Analysis: Independent Component Analysis, Wavelet Transform and Biomedical Signal Processing". From 2005 to 2016 he has been Assistant Professor of Electrical Engineering at the *Mediterranea* University of Reggio Calabria. In 2012 he receives the National Scientific Qualification as Associate Professor of Electrical Engineering. Since 2016 he is Associate Professor of Electrical Engineering at the *Mediterranea* University of Reggio Calabria. Since 2006 he conducts his teaching activity in the "Laurea, BS" and "Laurea Magistrale, MS" Courses in Engineering at *Mediterranea* University of Reggio Calabria. Fabio La Foresta conducts his research activity in the following areas: Circuits and System for Information extraction, processing and transmission; Circuits and System based on Artificial Intelligence; Electromagnetic Characterization of nano and micro materials. The specific topics are: Advanced systems for the study of the EEG spatio-temporal dynamics with applications on epileptic seizures prediction and Early Detection of Alzheimer; Classification of sEMG, ECG, fECG and EEG by Multiresolution and Multidimensional Analysis; Classification of EEG signals corrupted by superimposed Magnetic Resonance Field; Modeling of pathologic ECG signals; Non-Destructive Testing; Since 2006 he is Member IEEE and since 2017 he is Senior Member IEEE. He is author/co-author of about 100 papers and he is reviewer of international journals and conferences.

CURRENT POSITION

Fabio La Foresta is Associate Professor of Electrical Engineering and since 2012 he is with the Department of Civil, Energy, Environmental and Materials Engineering at the *Mediterranea* University of Reggio Calabria (I).

FIELDS OF RESEARCH

Electrical Engineering, Biomedical Signal and Image Processing, Artificial Intelligence, Neural Networks, Multidimensional and Multiresolution Analysis, Non Linear time series Prediction and Modeling, Nonlinear Dynamics, Computational Neural Engineering, Non-Destructive Testing, Micro and Smart Grids, Smart Energy.

EDUCATION

2012 National Scientific Qualification as Associate Professor of Electrical Engineering.
2004 Ph.D. Degree in Advanced Technologies for Information Engineering, University of Messina (I).
2000 National Teaching High School Qualification in Electrical Sciences.
1999 Engineer Profession Qualification, University of Messina (I).
1999 Training Course for Navy Officers at the Naval Academy of Livorno (I).
1998 Stage at ISEN in Simulation and Design of Fuzzy Control Systems, Lille (F).
1998 *Laurea* Electronic Engineering Degree *summa cum laude*, University of Messina (I).

UNIVERSITY POSITIONS

2016-todate Associate Professor of Electrical Engineering at the *Mediterranea* University of Reggio Calabria (I).
2005-2016 Assistant Professor of Electrical Engineering, *Mediterranea* University of Reggio Calabria (I).
2003-2005 Post-doctoral Researcher in Biomedical Engineering, *Mediterranea* University of Reggio Calabria (I).
2000-2003 PhD Student in "Advanced Technologies for Information Engineering", University of Messina (I).

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UNIVERSITY APPOINTMENS

2019-todate Chair Industrial Engineering Degree, DICEAM *Mediterranea* University of Reggio Calabria (I).
2006-todate Technical Coordinator of the *NeuroLab* Laboratory, *Mediterranea* University of Reggio Calabria (I).
2013-todate Ph.D. Committee Member Civil and Safety Engineering, *Mediterranea* University of Reggio Calabria (I).
2007-todate Committee Associate Member Engineer Qualification, *Mediterranea* University of Reggio Calabria (I).
2015-2019 Coordinator of the Academic Tutoring, DICEAM *Mediterranea* University of Reggio Calabria (I).
2015-2019 Committee Member of the Admission Test, *Mediterranea* University of Reggio Calabria (I).
2013-2019 Committee President Orientation Activity, DICEAM *Mediterranea* University of Reggio Calabria (I).
2010-2019 Delegate to the relationship with the CISIA, *Mediterranea* University of Reggio Calabria (I).
2015-2018 Committee President TFA in Electrical Engineering, *Mediterranea* University of Reggio Calabria (I).
2014-2018 Coordinator of the TFA Course in Electrical Engineering, *Mediterranea* University of Reggio Calabria (I).
2008-2012 Ph.D. Committee Member Information Engineering, *Mediterranea* University of Reggio Calabria (I).
2006-2008 Ph.D. Committee Member Biomedical Engineering, *Mediterranea* University of Reggio Calabria (I).
2001-2005 "Cultore della Materia S.S.D. ING-IND/31" at the Faculty of Engineering, University of Messina (I).
2001-2002 Committee Member of the 13th National Meeting of Electrical Engineering, University of Messina (I).

TEACHING ACTIVITY

2006-todate Professor of Electrical Engineering, *Mediterranea* University of Reggio Calabria (I).
2013-todate Professor of Electrical Circuits for Energy, *Mediterranea* University of Reggio Calabria (I).
2023-todate Professor of Micro e Smart Grids, *Mediterranea* University of Reggio Calabria (I).
2024-todate Professor of Smart microgrids modeling, *Ph.D* Course in Civil, Environmental and Industrial Engineering, *Mediterranea* University of Reggio Calabria (I).
2006-todate Supervisor of *Ph.D*. students and Degree Thesis in Electrical and Electronic Engineering
2020-2024 Professor of Circuits and Models for Bioengineering, *Mediterranea* University of Reggio Calabria (I).
2006-2023 Professor of Circuits and Algorithms for Signal Processing, *Mediterranea* University of Reggio Calabria (I).
2013-2014 Professor of Neuromorphic Sensors and Circuits, Post-Degree Master Course, MAMETEK (Biomedical Engineering), Medalics, *Dante Alighieri* University of Reggio Calabria (I).

SCIENTIFIC APPOINTMENTS

2014-todate Scientific Leader of Research Agreement between DICEAM Mediterranea University of Reggio Calabria (I) and IRCCS "Centro Neurolesi Bonino Pulejo" Messina (I).
2015-2019 Program Committee Member of The Italian Workshop on Neural Networks (WIRN), Vietri S.M., Salerno (I).
2017 Scientific Leader of Research Grant "Study of functional localization and brain connectivity using LORETA", DICEAM Mediterranea University of Reggio Calabria (I).
2016 Scientific Leader of Research Grant "EEG signals recording and models for the artifacts simulation", DICEAM Mediterranea University of Reggio Calabria (I).
2015 Scientific Leader of Research Grant "Study of brain connectivity from EEG signals using NeuCube", DICEAM Mediterranea University of Reggio Calabria (I).

RESEARCH PROGRAMS

2024-todate Member in the Research Project of MUR "Novel Approaches to Energy reduced deep Learning for health" (ACRONYM: NAEL), CUP C33C23001040005.
2023-todate Member in the Research Project of MUR "Technologies for climate change adaptation and quality of life improvement (TECH4YOU)" C33C22000290006 - ECS_00000009.
2023-todate Scientific Leader of OS10 in the Health Operational Plan of the Ministry of Health POS H53C22000800006 "CAL.HUB.RIA".
2019-2023 Unity Member in the National Operational Program for Research and Competitiveness PON ARS01_01147 "AEROMAT".
2019-2023 Unity Member in the National Operational Program for Research and Competitiveness PON ARS01_00158 "TEMIMIRATI".

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2019-2022 Member in the National Operational Program for Research and Competitiveness PON ARS01_00836 "COGITO".
2014-2019 Unity Leader in National Program GR-2011-02351397 "System for the Automatic Artifact Detection and Removal from Electroencephalographic Signals", Italian Ministry of Health.
2007-2013 Unity Member in the National Operational Program for Research and Competitiveness PON04a2_F "AQUASYSTEM".
2007-2013 Unity Member in the National Operational Program for Research and Competitiveness PONa3_00308 "Wind Generator with Magnetic Levitation (GELMINCAL)".
2007-2013 Unity Member in the National Operational Program for Research and Competitiveness PON01_01869 "Innovative Materials and Technologies for the territory and environmental protection (TEMADITUTELA)".
2005-2007 Unity Member in Research Program of Italian MIUR PRIN 2004 "Applications of Methods of Diagnostics Electromagnetic (AMDE)".
2010-2011 Coordinator of the Program of Scientific Research RdB2010 "Multiresolution and Multidimensional Analysis for EEG Artefact Removal", *Mediterranea* University of Reggio Calabria (I).
2009-2010 Coordinator of the Program of Scientific Research RdB2009 "ICA Algorithms for EEG processing", *Mediterranea* University of Reggio Calabria (I).
2008-2009 Coordinator of the Program of Scientific Research RdB2008 "Multiresolution Analysis for biomedical data processing", *Mediterranea* University of Reggio Calabria (I).
2007-2008 Unity Member of the Program of Scientific Research RdB2007 "Acquisition and processing of signals recorded from non-destructive testing", *Mediterranea* University of Reggio Calabria (I).
2006-2007 Unity Member of the Program of Scientific Research RdB2006 "Linear and non linear methods for epileptic seizures prediction from EEG signals", *Mediterranea* University of Reggio Calabria (I).
2004-2006 Unity Member of the Research Project PRA2004 (cod. ORME040209) "Advanced techniques for biomedical data processing", University of Messina (I).
2003-2005 Unity Member of the Research Project PRA2003 (cod. ORME033980) "Advanced non linear models for the study of magnetic hysteresis", University of Messina (I).
2002-2004 Unity Member of the Research Project PRA2002 (cod. ORME028230) "Field Computation for applications on magnetic hysteresis", University of Messina (I).
2001-2003 Unity Member of the Research Project PRA2001 (cod. CONO013570) "Model identification for hysteretic system", University of Messina (I).

EDITORIAL ACTIVITY

2020-todate Associate Editor of Applied Sciences - MDPI.
2017-todate Editor of Computational Intelligence and Neuroscience - Hindawi.
2017-todate Editor of Journal of Artificial Intelligence - Scientific Federation.
2022 Guest Editor Applied Sciences MDPI - SI Application of (EEG) Signal Analysis in Disease Diagnosis.
2020 Guest Editor Applied Sciences MDPI - SI Advances in Biomedical Signal Processing.
2015-2019 Program Committee Member WIRN (Italian Workshop on Neural Networks).

PUBLICATIONS

ORCID https://orcid.org/0000-0002-8290-5019

SCOPUS ID https://www.scopus.com/authid/detail.uri?authorId=6507980663

WoS ID https://www.webofscience.com/wos/woscc/summary/a6b9c487-3a36-4e68-b8e5-1c0928b7b6a5-0129160e9e/relevance/1