PERSONAL INFORMATION

Rosario Schiano Lo Moriello

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- https://www.scopus.com/authid/detail.uri?authorId=6507721996
- ING-IND/12 Misure Meccaniche e Termiche

Sex Male | *Date of birth* 21/12/1975 | *Nationality* Italian

Enterprise	University	EPR
☐ Management Level	☐ Full professor	☐ Research Director and 1st level Technologist / First Researcher and 2nd level Technologist / Principal Investigator
☐ Mid-Management Level	☒ Associate Professor	☐ Level III Researcher and Technologist
☐ Employee / worker level	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator	☐ Researcher and Technologist of IV, V, VI and VII level / Technical collaborator

WORK EXPERIENCE

July 2020 - present

Associate Professor

University of Naples Federico II – Department of Industrial Engineering

Main Research Activities

- Definition, development and implementation of monitoring and management platforms based on Internet of Things and Augmented Reality.
- Definition and implementation of methods for the compensation of bias and drift errors in inertial sensors in MEMS technology
- Remote control of measurement instruments: in this context, various solutions have been defined, designed and developed, based on both proprietary and open-source development environments, for the configuration and management of complex measurement stations distributed on geographic network.
- Measurement methods based on compressive sampling: definition, implementation and development of innovative measurement methods that exploit the recent compressed acquisition paradigm that allows to obtain reliable measurements starting from a small number of samples of the signal of interest.

SSD ING-IND/12 – Mechanical and Thermal Measurements

Jan 2015 – July 2020

Assistant Professor

University of Naples Federico II – Department of Industrial Engineering

SSD ING-IND/12 – Mechanical and Thermal Measurements

Mar 2006 – Dec 2014

Assistant Professor

University of Naples Federico II – Department of Electrical Engineering and Information technologies (former Department of Computer Science)

SSD ING-INF/07 – Electrical and Electronic Measurements

Apr 2005 – Feb 2006

Research grant

University of Naples Federico II – Department of Electrical Engineering

- Innovative methods for uncertainty estimation in the presence of indirect measurements characterized by non-linear measurement model.

SSD ING-INF/07 – Electrical and Electronic Measurements

June 2001 – Nov 2001

Research Collaborator

University of Naples Federico II – Department of Electrical Engineering

- Design, development and metrological characterization of a thin film ceramic humidity sensor at SIT (Italian service of calibration) Center of University of Studies of Cassino

SSD ING-INF/07 – Electrical and Electronic Measurements

EDUCATION AND TRAINING

Nov 2001 – Oct 2004

Ph.D. in Electrical Engineering

University of Naples Federico II – Department of Electrical Engineering

- Design, development, and performance assessment of distance/level meter based on ultrasonic sensors and low-cost microcontrollers.

Sep 1993 – Mat 2001

Master's degree cum laude in Materials Engineering

University of Naples Federico II – Department of Materials Engineering and Production

- Design, development, and metrological characterization of a thin film ceramic humidity sensor

WORK ACTIVITIES

Main projects

2019 – present — Scientific responsible of the CeSMA research group for the Research Project "Intelligent Monitoring System for the Safety of Urban Infrastructures (INSIST)", funded under the PON "RESEARCH AND INNOVATION" 2014-2020 AND FSC, referred to in DD notice of 13 July 2017 n. 1735. Research activities, with a total value of 300 k€, are mainly focused on the study, realization and characterization of low-cost sensor prototypes for structural monitoring and related prototype data collection systems; development of new algorithms and intelligent systems to efficiently extract relevant information from the data collected by the sensors installed in the monitored structures; definition of qualification procedures for monitoring systems.

2019 – present — Participant in the project "REINForce REsearch to INspire the Future" funded under INVITALIA Contratto di Sviluppo. Research activities are mainly focused on the definition, development and characterization of a data acquisition system based on the Internet of Things paradigm for the predictive maintenance of rotating supports and bearings of engines and bogies for railway rolling stock.

2014 – 2016 — Participant in the project "TELEMACO - Tecnologie Abilitanti e Sistemi Innovativi a Scansione Elettronica del Fascio in Banda Millimetrica e Centimetrica per Applicazioni Radar a Bordo di Velivoli" funded in Bando PON MIUR "Avviso rivolto al potenziamento e consolidamento di Distretti e Laboratori". Research activities mainly focused on definition and development of a methodology for the generation and acquisition of test signals for the validation of technological demonstrators of radar systems with particular reference to SAR.

2013 – 2015 — Coordinator of the Work Package "Project 6" (value 1.3 M€) of the activities included in the Systems Technologies proposal for Territorial and Air Safety, for the realization of a Regional Program Contract within the production chain called "Work Into Shaping Campania's Home (WISCH), presented by the T2STAR consortium in response to the public notice of the Campania Region called "Regional Program Contract for the Innovative Development of the Strategic Manufacturing Sector in Campania" published on BURC n. 58 of 14 September 2012. Research activities aimed at study of new sampling methods based on "Compressive Sampling"; implementation of a measurement algorithm based on "Compressive Sampling" for the power measurement of bandpass signals that overcomes some known limitations of compressed sampling in terms of computational cost; development and characterization of the measurement algorithm on low cost and low performance data acquisition systems

2011 – 2015 — Participant in the project "SIRENA Sviluppo e Industrializzazione Sistemi A Radio Frequenza E Finestre Elettromagnetiche" funded in PON Ricerca e Competitività 2007-2013 INVITALIA Contratto di Sviluppo. Research activities mainly focused on the study of the technology of non-

contact sensors for the measurement of typical quantities of interest in testing; study of systems for the generation of virtual targets for the characterization of radar systems with particular regard to systems in Digital Radio Frequency Memory technology; studies on the measurement uncertainty in an RF test system; studies and research on procedures and test methods for transmission-data systems.

2011 – 2015 Participant in the project “ACME -Architettura informativa basata su tecnologia Cloud per la gestione e l’analisi della sicurezza dell’archivio dei dati di Misura provenienti da processi di produzione Elettronica su larga scala” funded in Bando PAC, Linea Big Data, Bando Start Up MIUR, D.M. 436 del 13/03/2013. Research activities mainly focused on Design of data encoding and decoding processes, with the aim of ensuring homogeneity for subsequent statistical analysis processes; definition and development of a methodology for the secure and efficient transmission of measurement results from electronic front-ends to Cloud-based storage systems.

2010 – 2013 Participant in the project “PIEZORAIL Sistemi di generazione dell'Energia Elettrica mediante componenti piezoelettrici per applicazioni a sistemi di trasporto su rotaia in ambito urbano” funded in Bando MATTM "Fonti rinnovabili in ambito urbano: Ricerca e Innovazione”. Research activities mainly focused on definition, development and characterization of devices for the recovery of mechanical energy through the piezoelectric effect and their application to rail transport systems for the power supply of low-power lighting and display systems.

Teaching activities

2020 – present “Sensor data fusion and measurement uncertainty management” (12 CFU, SSD ING-IND/12) for students of master’s degree in Autonomous Vehicle Engineering (MOVE) at University of Naples Federico II

2019 – present “Sensors and measurement instrumentation” (6 CFU, SSD ING-INF/07) for students of bachelor’s degree in Mechatronics Engineering at University of Naples Federico II

2018 – present “Measurement laboratory” (6 CFU, SSD ING-IND/12) for students of bachelor’s degree in Mechanical Engineering and Mechatronics Engineering at University of Naples Federico II

2018 – 2019 “Mechanical and Thermal Measurements” (9 CFU, SSD ING-IND/12) for students of master’s degree in Mechanical Engineering at University of Naples Federico II

2017 – 2019 “Measurement sensors and transducers” (9 CFU, SSD ING-INF/07) for students of master’s degree in Electronic Engineering at University of Naples Federico II

2013 – 2017 “Measurement systems based on microcontrollers” (3 CFU, SSD ING-INF/07) for students of bachelor’s degree in Computer Science Engineering and Automation Engineering at University of Naples Federico II

2013 – 2017 “ Measurements for the Automation and Industrial Production” (6 CFU, SSD ING-INF/07) for students of bachelor’s degree in Computer Science Engineering and Automation Engineering at University of Naples Federico II

2012 – 2015 “Measurements for Materials Engineering” (9 CFU, SSD ING-INF/07) for students of master’s degree in Materials Engineering at University of Naples Federico II

2010 – 2013 “Measurements for the Automation and Industrial Production” (6 CFU, SSD ING-INF/07) for students of bachelor’s degree in Computer Science Engineering and Automation Engineering at University of Naples Federico II

2006 – 2010 “Measurements on materials” (4 CFU, SSD ING-INF/07) for students of master’s degree in Materials Engineering at University of Naples Federico II

2006 – 2010 “Materials for sensors” (4 CFU, SSD ING-INF/07) for students of master’s degree in Materials Engineering at University of Naples Federico II

2005 – 2012 “Measurement electronic instrumentation” (5 CFU, SSD ING-INF/07) for students of bachelor’s degree in Materials Science and Engineering at University of Naples Federico II

2001 – present He supervised, as supervisor or co-supervisor, more than 100 theses in various disciplines related to the Academic Recruitment Field 09/E4 Measurements and to the scientific/disciplinary fields ING-IND/12 Mechanical and Thermal Measurements and ING-INF/07 Electrical and Electronic Measurements for students in Mechanical Engineering, Aerospace Engineering, Electronic Engineering, Electrical Engineering, Computer Science Engineering, Materials Engineering, Telecommunications Engineering and Automation Engineering.

Awards and qualifications

May 2021 National Academic Qualification for Full Professor in the Academic Recruitment Field 09/E4 Measurements with the unanimous decision of the evaluation Committee.

2019 The demonstrator “Lora-based logic selectivity for fault protection” received the Best Live Demonstration award at the conference IEEE Metrology for Industry 4.0 and IoT

2018 The paper “Smart power meters in augmented reality environment for electricity consumption awareness” published on MDPI Energies, received the award for innovation “Nostalgia di Futuro” from the Observatory TuttiMedia.

Dec 2014 National Academic Qualification for Associate Professor in the Academic Recruitment Field 09/E4 Measurements with the unanimous decision of the evaluation Committee.

2014 Best paper award of the special session “Test and Measurement Solutions for Aerospace Security and Defense” of the IEEE International Workshop on Metrology for Aerospace 2014 for the paper “First steps towards an innovative compressive sampling based-THz imaging system for early crack detection on aerospace plates

Editorial activity

Associate Editor Editorial board member of the journal Virtual Worlds, MDPI

Guest Editor Special issue "Advances in Sensing, Processing and Transmission for IoT-Oriented Sensors Networks" for the journal Sensors MDPI. The Special Issue closed on March 31st, 2019, with the publication of 17 out of 31 articles (with a rejection rate of 45%) submitted by researchers from all the world.

Topic Editor Topical Advisory Panel Member of the journal Sensors, MDPI

Topic Editor Topical Advisory Panel Member of the journal Metrology, MDPI

Reviewer Since 2001 he acts as reviewer for several peer-review journals, the most relevant of which are:

IEEE Transactions on Instrumentation and Measurement,
IEEE Sensors Journal
IOP Measurement Science & Technology,
Measurement: Journal of the International Measurement Confederation,
JINST Journal of Intrumentation
Sensors MPDI
Energies MDPI
Electronics MDPI

Grants

2020 – present Scientific Coordinator of a research contract, of the duration of 2 years, stipulated between the Centro Servizi Metrologici e Tecnologici Avanzati (CeSMA) and the company Wind s.r.l., owner of a Research Project, named Gannet. The activities, with a total value of 80 k€, are aimed at the realization of an inertial unit for a fixed-wing drone weighing 180 kg and the realization of the indoor functional test of the Intelligent Flight Control System

2019 – 2021 Scientific Coordinator of research collaboration contracts (with a total value of 22 k€) with CERN and coordinated an international research group, consisting of a Ph.D. student and some students of the master’s degree for an activity in collaboration with the IT-ST group of CERN of Geneva. The aim of the research activities consisted in the definition and implementation of a method based on SMART measures for Hard Disk damage prediction in large data centers.

Patents and spinoff

2023 – present SPINOFF – Founding member, togheter with Dr. Federico Gargiulo and Dr. Federico de Vitis, of the University Spin Off “COGITO” S.r.l. The purpose of the company is to carry out he following activities:
- Realization and marketing of platforms based on Internet of Things, Industrial Internet of Things and Artificial Intelligence for monitoring, control and predictive maintenance of industrial plants and systems; creation and marketing of platforms based on Internet of Things and Artificial Intelligence for monitoring, control and predictive maintenance of domestic systems and devices.

2022 – present SPINOFF - Founding member, together with Prof.ssa Annalisa Liccardo, Prof. Francesco Bonavolontà, Dr. Enzo Caputo, Dr. Giorgio de Alteriis and Dr. Antonio Gloria, of the university Spin Off "Augmented Reality for Commercial And DIdactical Applications (ARCADIA)" S.r.l. The purpose of the company is to carry out the following activities:
- Realization of platforms based on Internet of Things and Augmented Reality for educational and training applications in schools, universities and companies. The activities are aimed at realizing augmented reality faithful replicas of tools typically present in laboratories to allow learning of their techniques of use. Realization of innovative interfaces based on protocols typical of the Internet of Things for the remote control of laboratory instrumentation.

2019 – present SPINOFF - Founding member, together with Prof.ssa Maria Quarto and Prof. Domenico Accardo, of the university Spin Off "Solutions for Healthcare by Advanced Radio Protection and Surveillance (SHARPS)" S.r.l.s. The purpose of the company is to carry out the following activities:

- Implementation of distributed radiological monitoring networks based on Internet of Things paradigm and autonomous vehicles to operators and companies (public and private) that must perform physical surveillance of environments, workers and people in accordance with Legislative Decree 241/00. The activities are aimed at developing and consolidating advanced, innovative and integrated technologies and methodologies for radiation protection and environmental and personal dosimetry. These activities will be referred to the support to the engineering design, to the realization, to the conduction of research activities, to the valorization, communication and dissemination of high-profile scientific research.

2012 PATENT - Patent title: "Apparatus for measuring soil humidity".
Reference body: WIPO World Intellectual Property Organization
Application number: WO2012052165
Date of Submission: 19/10/2011
Publication Date: 26/04/2012
Brief description: This patent relates to an apparatus for measuring soil humidity by means of a time domain reflectometry method, for use in irrigation systems based on plastic buried pipes and, in particular, in drip irrigation systems comprising a network of conduits consisting of straight buried pipes, short linear segments, straight or "T" joints, plugs and possible curvilinear elements. Specifically, straight conduits consist of tubular elements, made of rigid or flexible plastic material of any suitable cross-section, incorporating two electrical cables made of conductive metallic material. The tubular elements are associated with straight or "T" joints and end caps to ensure the electrical continuity of the apparatus.

ADDITIONAL INFORMATION

Publications

Total number of publications in peer-review journals: 57
Total number of citations: 1408
H index (Scopus): 22

ASN comparison		Threshold PO COM (PO ASN)
Number of publications in peer-review journals	40	15 (15)
Number of citations	926	411 (277)
H index (Scopus)	17	10 (10)

Most Cited papers

1) Angrisani, L., Baccigalupi, A., Schiano Lo Moriello, R., A measurement method based on Kalman filtering for ultrasonic time-of-flight estimation, (2006) IEEE Transactions on Instrumentation and Measurement, 55 (2), pp. 442-448. DOI: 10.1109/TIM.2006.870123
2) Ascione, M., Buonanno, A., D'Urso, M., Angrisani, L., Schiano Lo Moriello, R., A new measurement method based on music algorithm for through-the-wall detection of life signs, (2013) IEEE Transactions on Instrumentation and Measurement, 62 (1), art. no. 6298961, pp. 13-26. DOI: 10.1109/TIM.2012.2209917
3) Fontanella, R., Accardo, D., Schiano Lo Moriello, R.S., Angrisani, L., De Simone, D., MEMS gyros temperature calibration through artificial neural networks, (2018) Sensors and Actuators, A: Physical, 279, pp. 553-565. DOI: 10.1016/j.sna.2018.04.008
4) Angrisani, L., Baccigalupi, A., Schiano Lo Moriello, R., Ultrasonic time-of-flight estimation through unscented Kalman filter, (2006) IEEE Transactions on Instrumentation and Measurement, 55 (4), pp. 1077-1084. DOI: 10.1109/TIM.2006.877748
5) Gallucci, L., Menna, C., Angrisani, L., Asprone, D., Schiano Lo Moriello, R., Bonavolontá, F., Fabbrocino, F., An embedded wireless sensor network with wireless power transmission capability for the structural health monitoring of reinforced concrete structures, (2017) Sensors (Switzerland), 17 (11). DOI: 10.3390/s17112566
6) Angrisani, L., D'Arco, M., Schiano Lo Moriello, R., Vadursi, M., On the use of the warblet transform for instantaneous frequency estimation, (2005) IEEE Transactions on Instrumentation and Measurement, 54 (4), pp. 1374-1380. DOI: 10.1109/TIM.2005.851060
7) Mariscotti, A., Marrese, A., Pasquino, N., Schiano Lo Moriello, R., Time and frequency characterization of radiated disturbance in telecommunication bands due to pantograph arcing, (2013) Measurement: Journal of the International Measurement Confederation, 46 (10), pp. 4342-4352. DOI: 10.1016/j.measurement.2013.04.054
8) Angrisani, L., D'Apuzzo, M., Schiano Lo Moriello, R., Unscented transform: A powerful tool for measurement uncertainty evaluation, (2006) IEEE Transactions on Instrumentation and Measurement, 55 (3), pp. 737-743. DOI: 10.1109/TIM.2006.873811
9) Angrisani, L., Schiano Lo Moriello, R., Estimating ultrasonic time-of-flight through quadrature demodulation, (2006) IEEE Transactions on Instrumentation and Measurement, 55 (1), pp. 54-62. DOI: 10.1109/TIM.2005.861251

10) Angrisani, L., Bonavolontà, F., Liccardo, A., Schiano Lo Moriello, R., Serino, F., Smart power meters in augmented reality environment for electricity consumption awareness, (2018) Energies, 11 (9), art. no. 2303. DOI: 10.3390/en11092303

SIGNATURE

Napoli, January the 8th, 2024