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## 1. Personal data, education and career history

Born on May 05, 1961 in Bologna.

Classical high school diploma in July 1980 (rating 60/60). Master Degree in Mining Engineering on June 30, 1987 (rating 100/100).

University researcher in Surveying and mapping since June 30, 1990.

Associate professor in Surveying and Mapping since 1998.

Full Professor of Geomatics in December 2002.

Pertaining to the DIEF (Department of Engineering "Enzo Ferrari") Dept., University of Modena and Reggio Emilia since 2005. Lecturer in charge of "Geomatics", "Geomatics for environmental and structural monitoring" and "Applied Geomatics" at Environmental and Civil Engineering courses.

Delegate for Internationalization of University of Modena and Reggio Emilia.

Certificate and licenses: Official Red Cross Military- Lieutenant Commissioner; Diving Instructor of FIAS ( Italian Federation of Diving Activities) since 1989 and of CMAS (Confédération Mondiale des Activités Subaquatiques) since 1996; PADI Professional Association of Diving Instructors) Dive Master since 1989. Member of Civil Protection of Emilia-Romagna Region in rule of diver. Nautical license since 1990.

Known languages: English (level C1), French and Spanish.

## 2. Academic and Scientific positions and awards

Project Leader of "Physical Geodesy" of SCAR (Scientific Committee on Antarctic Research) WGGI (Working Group on Geodesy and Geographic Information), 1998-2002.

Invited Member of ANTEC (ANTarctic Neotectonic) SCAR Group of Specialists, 1998 - 2004.

Nominated by CSNA (Italian Commission on Antarctic Research) in Scientific Committee of Sector 2 (Geodesy and Observatories", 1999-2001, 2002-2003 and 2004-06.

Coordinator of Working Group "Antarctic Gravity project" IAG (International Association of Geodesy) Commission, 1999-2003.

Coordinator of sub-Commission "Antarctica" within IAG Commission "Crustal Deformations", 1999-2003.

Deputy Chair of Geoscience Standing Scientific Group (GSSG) of SCAR (Scientific Committee on Antarctic Research), 2002-2004.

Member of Reviewers List of co-funded projects of MIUR since 2003

Member of National List of reviewer of CIVR ( Italian Committee of Research Evaluation) since 2004.

Responsible of "Surveying and Mapping" Laboratory of DAU Dept., Polytechnic of Bari, 2000-2005.

Scientific and Didactic Responsible of second level Master "MANTRA -Master in Transportation Management " of Polytechnic of Bari -financed by EU PON 2000/06 Avv.4391/01, 2000.

Reviewer for NSF ( National Scientific Foundation) of research programs.

President of Civil and Environmental Engineering University Courses at Engineering Faculty of Taranto, Polytechnic of Bari, 2003-2006.

Member of Evaluation Commission for a researcher position in Geodesy at C.N.R., Spatial Geodesy Centre, Matera, Italy, 2003.

Member of Evaluation Commission for the assumption of n.14 First Technologist-Professional Skill, C.N.R., Area: Seismological data management. 2003.

Member of Evaluation Commission: PhD final test in Geophysics (Geodesy sub-sector) in 2004 (XVII cycle) and in Geophysics (sub-sector Geodynamics) in 2005 (XVIII cycle), in Geophysics, 2006 (XIX cycle). University of Bologna.

Chief Officer (Coordinator) of SCAR GSSG, 2004-2012.

Dean of DIASS (Dept. of Environmental Engineering and for Sustainable Development), Polytechnic of Bari, 2004- 2005.

Evaluator of proposal for Italian Program for Research (PRIN) of MIUR -Italian Ministry of University and Research. 2005, 2006 and 2008.

Member of Evaluation Commission for confirmation in role of University Researchers (art. 31 del D.P.R. 382/80 and law 3 Luglio 1998, n. 210)-ssd ICAR/06, 2004 and 2005.

Member of Evaluation Commission: PhD final test in “Geodetic and Topographic Sciences” XIX Cycle -University of Napoli, Parthenope 2004.

Chair of SIFET (Italian Society of Photogrammetry and Topography) Scientific Committee, 2007-2010.

Member of ASITA (Italian Scientific Association for Territory and Environmental Space data) Scientific Committee, 2007-2010.

Member of International Scientific Organizing Committee (ISOC) of the following SCAR Meetings and Open Science Conference: XXVIII ( 26-28 July 2004, Bremen , Germany), XXIX ( 12-14 July 2006, Hobart, Tasmania, Australia), XXX ( 8-11 July 2008, St.Petersburg, Russia), XXXI ( 3-6 august 2010, Buenos Aires, Argentina), XXXII ( 16-18 July 2012, Portland, Oregon, USA).

Nominated by CSNA (Scientific National Committee on Antarctica) in CONOGEA (National Committee on Antarctic Geographic Name) since 2008.

Editor-in-chief of "Applied Geomatics" journal edited by Springer (Germany) since 2009.

Hemeritus Professor (Professor Honorario) of Ricardo Palma University - Lima (Perù) in 2009.

Member of Technical Committee for Modena Duomo heritage, Unesco site, since 2009.

Director of DIMeC ( Mechanical and Civil Engineering) Dept.,University of Modena and Reggio Emilia, 2010-2012.

President of SIFET ( Italian Society of Photogrammetry and Topography), 2011-2014.

Director of EGEA Inter-University Centre ( University of Modena and Reggio Emilia, University of Bologna, Polytechnic of Bari) since March 2011.

Editor -in-chief of “Bollettino della SIFET”, 2011-2014

Chair of SCAR GIANT (Geodetic Infrastructure of Antarctica) Expert Group since July 2012.

Director of DIFE DEpt. (Engineering Department “Enzo Ferrari”), University of Modena and Reggio Emilia ,2012-2018.

Member of Academic Senate of UNIMORE, 2012-18

Responsible of Italian Geodetic Observatory in Antarctica (IGOA) of PNRA since 2013.

Founding Partner of UNIMORE start-up GEIS (Geomatics Engineering Innovative Solutions), 2013-2019

Member of evaluation commission of Full and Associate professor (ASN), 2012-13

Member of Evaluation Group of damaged activities by flooding in Modena province- RER - 2014

Delegate from UNIMORE Rector to ERGO committee for students rights in Emilia Romagna region since 2015

Member of MUNER Council (Motorvalley University of Emilia Romagna Region) 2015-2020.

Member of Administrative Council of CRICT ( Research Centre Innovation Construction and Territory) of UNIMORE, 2016

Member of Administrative Boarding of “Association China Project” - UNIMORE, Municipality of Modena, Foundation of Modena, 2017-2019.

Delegate from Unimore Rector to Coordination Table on “Blue Growth” of Emilia Romagna region since 2018.

Member of High Surveillance Committee of UNESCO site in Modena since 2018.

External Examiner for final Phd test close PhD schools of abroad Universities; the most recent is the evaluation of PhD thesis of Xavier Ochieng at University of Nottingham, Ningbo China, 2019

Member of AIOSS (Italian Association of Scientific Divers) since 2019.

President of “Association China Project” - UNIMORE, Municipality of Modena, Foundation of Modena,since October 2019.

Rector’s Delegate for Internationalization of Unimore since November 2019.

Member of directive council of DHMORE Interdipartimental Centre , UNIMORE , since 2021

Member of Evaluation Commissions for Professor and Researcher positions of abroad universities and research centers; the most recent is the evaluation of Gethin Wyn Roberts as “Affiliated Professor at University of the Faroe Islands- 2020

Member of several Commissions for Researcher and Professor competition notice on “Surveying and Mapping” area; most recent are Full Professor at UNIBO 2017, Full Professor at POLITO 2019, Associate Professor at UNIFE 2020; Full Professor at UNimessina 2023; Full Professor at Polito 2023; Full Professor at UNIFI 2024).

### 3. Relevant Scientific Activity

He made researches on Geomatics, Applied Geodesy, Applied Geophysics and in Surveying and Mapping sciences and technologies. He is author and co-author of 230 publications on national and international Journals and he presented memories at Italian and international meeting and symposia.

He has been tutor of 25 research fellows. He has been supervisor of 8 PhDs: 6 of Engineering of Industry and Territory PhD School, University of Modena and Reggio Emilia, C.Castagnetti, E.Bertacchini, E.Boni, I.Toschi, R.Rivola, P.Rossi; 2 of Environmental and Territory Engineering PhD School of Polytechnic of Bari, A.Galeandro e M.G.Angelini. He has been co-tutor of 12 PhDs. The principal researches have been done on:

- studying and testing electronic surveying instruments;
- study and analysis of static and kinematic GPS; researching and testing GPS permanent network for geodetic reference frame definition;
- applications of classical geodetic techniques, GPS and remote sensing for movement and deformation control of structures and landslides;
- definition and study of geodetic infrastructure and crustal deformation control in Antarctica; within geodetic research made in Antarctica participated to seven expeditions;
- glacial movement measurements with GPS and remote sensing in Italy and in Antarctica;
- studies and researches on underwater photogrammetry for surveying and monitoring of submerged structures; application to archaeology, biology and civil and industrial engineering; integrated systems application to Cultural heritage surveying and monitoring;
- topographical and photogrammetric surveying of terrestrial and underwater archaeological and architectural sites;
- study and realization of Rules for numerical cartography generation at small and big scale;
- G.I.S. realization of technological networks, archaeological sites and areas subject to environmental risk;
- Researches and experimental tests in Applied Geophysics, particularly in geophysical prospection in sea and in confined waters and applications in tectonics and crustal geodynamics.

### 4. Responsibility and Coordination of National and International Research

Responsible of Geodetic Research Units in "Glaciology and climatology" and "Geophysical and Geodetical observatories" PNRA (Italian Research Programs in Antarctica) projects 1995-98 (100 000 euro).

P.I. of "Advanced topography and digital photogrammetry techniques applied to architectural and archaeological surveying", UNIBO funds, 97-98 (5 000 euro).

Scientific Responsible of Research Unit "Multidisciplinary study of maritime Villa, harbours and fisheries of Roman and pre-roman age along Italian and Mediterranean coastal zone for the evaluation of crustal deformations of earthquake and volcanological areas and for average sea level evaluation in last Holocene", Agenzia 2000 Research Coordinated Project of C.N.R. (Italian Research Council) (11 000 euro).

Scientific Responsible of the Research "Monitoring of the territory with space geodesy techniques (GPS) and remote sensing (SAR, INSAR): study of the techniques and methodological applications", Polytechnic of Bari funds, for 1999-2000 and 2000-01 (9000 euro).

Scientific Responsible of Research Unit DAU (Dipartimento di Architettura e Urbanistica), Polytechnic of Bari "Altimeter-Based Investigations in Corsica, Capraia and Contiguous Areas (ALBICOCCA)" project financed by ASI (Italian Space Agency)- Contract CNR/ASI - I/R/164/02 (13 000 euro).

Coordinator of following Geodesy project of PNRA: "Geodesy and Mapping of eastern Antarctic, Pacific sector", 1999-2001 (320 000 euro); "Surveying and Geodetic Monitoring of northern Victoria Land, east Antarctica, Pacific sector", 2002-03 (250 000 euro); "Geodetic Monitoring of northern Victoria Land, Antarctica", 2004-06 (330 000 euro).

Scientific Responsible of Research Unit "Digital surveying methods applied to architectural and archaeological sites to define a risk map of cultural heritage" of PRIN04 "Cultural heritage risk map: surveying, georeferencing, monitoring and multiscale modelling" P.I Prof. C. Monti, Polytechnic of Milano (65 000 euro).

Coordinator of Mapping and GIS research team "Characterization plan of Polluted site of national interest of Taranto", within the activity was realized the GIS of polluted site 2002.

Scientific and Didactic Responsible of second level Master “MANTRA -Master in Transportation Management ” of Polytechnic of Bari -financed by EU PON 2000/06 Avv.4391/01 (450 000 euro). National Coordinator (P.I.) of PRIN 2007 “ Surveying and multi-temporal analysis in a GIS of Geospatial information for monitoring of movements and deformations of risk hazards “ (260 000 euro).

Responsible of Italy-USA scientific collaboration program 2008-2010 for researchers exchange - MAE funding (10 000 euro).

P.I. of PNRA projects: “Geodetic Observatory” (40 000 euro) and “Geodynamics of northern Victoria Land”, 2009-12 (70 000 euro) and “ Geodetic and geophysical surveying for northern Victoria land geodynamics modeling” PNRA for 2012-2014 (48 000 euro).

Responsible of UNIMORE R.U. “Mission Antonio Raimondi: researches in Calchaqui Valley (Salta, Argentina)- contributions for International Missions- MAECI 2013 (4 000 euro), 2014 (4 000 euro), 2015 (3 000 euro), 2016 ( 4 000 euro), 2017 (4 000 euro), 2018 (4 000 euro), 2019 (3 000 euro).

Scientific Responsible of Laser Scanner and Photogrammetric surveying within the Project “Restoration and consolidation of Al-Hadbah Mynaret in Mosul, Iraq” - Direction of Baghdad UNESCO Office - 2013.

Coordinator of “Visual Versilia” Project - E-GEA Center - Research competitive notice 2014-15- Foundation Cassa di Risparmio di Lucca -2014 (9 000 euro).

Scientific Responsible of “Underwater Photogrammetry fo coral reef monitoring - Moorea AVATAR” project in collaboration with ETH Zurich (Swi) and University of Santa Barbara (USA) since 2015

Coordinator of “Visual Versilia 3D” Project - E-GEA Center - Research competitive notice 2016-17- Foundation Cassa di Risparmio di Lucca - 2014 (9 000 euro).

P.I. of “Integrating 3D surveying and natural hazard assessment to propose suitable solutions for long-term preservation and safe fruition of old traditional villages in Vietnam: a pilot study in Duong Lam village, Son Tay, Ha Noi” .Executive Programme for Scientific and Technological co-operation between the italian republic and the socialist republic of Vietnam for the years 2017-19. 2017 (70 000 euro)

Responsabile of UO -CRICT-UNIMORE- INSPIRE project founded on POR\_FSR Emilia Romagna region (PI M.Balzani (UNIFE) 2018 ( 121 000 euro)

Responsible of Unimore O.U. - “After the Damages” Master - High Expertise competitive notice - Emilia Romagna Region- 2019.

Scientific Responsible of Italian Geodetic Observatory in Antarctica - PNRA14\_00111 (OSS-03 Terra Vittoria Geodesy ) of PNRA- 2019 (9 000 euro)

Coordinator of “Developing technology and methods for the precise investigation of marine animal forest 3D-structural complexity” (FWS\_14) - EuroMarine European Marine Research Network 2019- (EU) project (10 000 euro).

Responsible of “ Extraordinary mantainance and upgrading of Permanent Observatories network in Antarctica) PNRA funding- 2020 (19 000 euro)

Principal Investigator of “SIMBAD: Sistemi Innovativi di rilievo per il Monitoraggio ambientale e la ricostruzione 3D di organismi Biocostruttori mArini con Droni subacquei “. FAR2020- Unimore Mission Oriented funds 2020 (70 000 euro).

Scientific responsible of Italian Geodetic Observatory in Antarctica IGOA of PNRA- 2023 (128 000 euro)

## 5. Didactic activity

Since 2019-2020 - Lecturer in charge of “Applied Geomatics” at MD Civil and Environmental Engineering course - Engineering Faculty of University of Modena and Reggio Emilia

From 2013/14 to 2018-19 - Lecturer in charge of “Geomatics for monitoring of structures and environmental” at MD courses in “Civil engineering” and “ Engineering for Environmental Sustainability” - Engineering Faculty-UNIMORE

From 2007/08 to 2016/17- Lecturer in charge of “Geomatica” (“Geomatics”) - three-year Degree-course “Civil and Environmental Engineering” - Engineering Faculty of University of Modena and Reggio Emilia

From 2007/08 to 2012/13- Lecturer in charge of “Geomatica applicata al monitoraggio ambientale e strutturale “ ( Applied Geomatics to environmental and structure engineering”) at MD course in Engineering for Environmental Sustainability” - Engineering Faculty-UNIMORE.

Since 2019/20 - Lecturer in charge of “ Geomatica Applicata” ( Applied Geomatics) at MD course in Civil Engineering- University of San Marino -Joint Degree with UNIMORE

From 2016/17 to 2018/19 -Lecturer in charge of “Geomatica applicata al monitoraggio ambientale e strutturale “ ( Applied Geomatics to environmental and structure engineering”) at MD course in Civil Engineering- University of San Marino -Joint Degree with UNIMORE.

From 2010/11 to 2019/20 - Lecturer in charge of “ Geomatica ” ( Geomatics) at three-year Degree course in Civil Engineering- University of San Marino - Double Degree with UNIMORE

From 2016/17 to 2019/20 - Lecturer in charge of “Topografia ed esercitazioni” ( Surveying and exercises) at professionalizing three-year degree (CET address) in Civil Engineering University of San Marino.

From 2005/06 to 2006/07 -Lecturer in charge of “Topografia e Cartografia” ( Surveying and Mapping) at three-year Degree in Environmental Engineering and “ Sistemi e strumentazione di rilevamento ambientale “ e “Laboratorio di GIS” ( “Systems and instruments for environmental surveying” and “GIS laboratory”) at MD course in Engineering for Environmental Sustainability” - Engineering Faculty-UNIMORE.

From 2005/06 to 2007/08 - Lecturer of “Topografia” ( Surveying) at three-year Degree in Civil Engineering - Military Academy of Modena , managed by Engineering Faculty -University of Modena and Reggio Emilia.

From 1998/99 to 2002/03 - Lecturer in charge of “Topografia” ( “Surveying”) and “Rilevamenti speciali per l’ambiente ed il territorio” ( Special surveys for environmental and territory) five-years Degree courses in “Civil Engineering” and “Engineering for Environmental and Territory “ - Engineering Faculty of Taranto- Polytechnic of Bari.

From 2003/04 to 2005/06 - Lecturer in charge of “Geomatica” ( “Geomatics”) at three-years Degree courses in “Civil Engineering” and “Engineering for Environmental and Territory “ - Engineering Faculty of Taranto- Polytechnic of Bari.

From 2003/04 e 2005/06- Lecturer in charge of “Rilievo per collaudi e controllo delle deformazioni” ( Surveying and control of deformations) at MD courses in “Engineering for environmental and territory” and in “ Planning and management of Civil Engineering works”- Engineering Faculty of Taranto- Polytechnic of Bari.

From 1994/95 to 1998/1999 - Lecturer of Course of “Elementi di topografia e fotogrammetria” ( “Elements of surveying and photogrammetry”) and from 1999/2000 2002/03 of “ Telerilevamento” ( Remote Sensing) five -years Degree course in “Conservation of Cultural Heritage” Faculty of Conservation of Cultural Heritage- Ravenna - University of Bologna.

From 1999-2000 to 2002/03 Lecturer in charge of "Fotogrammetria" (Photogrammetry) at three-year Degree in FAD course in “Operator in Cultural Heritage” - Consorzio Universitario Nettuno (operated in conjunction between : Faculty of Cultural heritage conservation, Ravenna-UNIBO, University of Firenze, University of Napoli).

From 1994/95 to 1996/97 Lecturer in charge of “Topografia” (Surveying) at three-years professional Degree in “Environmental and resources Engineering” Engineering Faculty -UNIB

Since 1990 to 1997 -Teaching activities ( Lab. Exercises, students receipt, exams, thesis assistance) for courses of Surveying, Surveying II, Photogrammetry, Applied Geophysics within five-years Degree courses in Civil Engineering, Environmental and Territory Engineering ( former Mining Engineering) at Engineering Faculty UNIBO

Supervisor and co-supervisor of 65 thesis for three-years degree and master degree.

He has been member of following PHD Schools :

2024 -Dottorato Nazionale in Scienze Poalri-Coordinatore nazionale Ca’ Foscari Venezia

2024-Dottorato Ingegneria Civile, Ambientale e materiali- UNIMORE

2023 -Dottorato Nazionale in Scienze Polari-Coordinatore nazionale Ca’ Foscari Venezia

2023-Dottorato Ingegneria Civile, Ambientale e materiali- UNIMORE

2021-2022 Dottorato nazionale Sviluppo Sostenibile e Cambiamento Climatico- coordinate nazionale IUSS PAVIA

2022	36	INGEGNERIA INDUSTRIALE E DEL TERRITORIO-2017	Università degli Studi di
		MODENA e REGGIO EMILIA	
2021	36	INGEGNERIA INDUSTRIALE E DEL TERRITORIO-2017	Università degli Studi di
		MODENA e REGGIO EMILIA	
2020	36	INGEGNERIA INDUSTRIALE E DEL TERRITORIO-2017	Università degli Studi di
		MODENA e REGGIO EMILIA	
2019	35	INGEGNERIA INDUSTRIALE E DEL TERRITORIO-2017	Università degli Studi di
		MODENA e REGGIO EMILIA	

2018	34	INGEGNERIA INDUSTRIALE E DEL TERRITORIO-2017 MODENA e REGGIO EMILIA	Università degli Studi di
2017	33	INGEGNERIA INDUSTRIALE E DEL TERRITORIO-2017 MODENA e REGGIO EMILIA	Università degli Studi di
2014	30	INGEGNERIA INDUSTRIALE E DEL TERRITORIO-2014 MODENA e REGGIO EMILIA	Università degli Studi di
2013	29	INGEGNERIA INDUSTRIALE E DEL TERRITORIO-2013 MODENA e REGGIO EMILIA	Università degli Studi di
2012	28	HIGH MECHANICS AND AUTOMOTIVE DESIGN & TECHNOLOGY/MECCANICA AVANZATA E TECNICA DEL VEICOLO-2012	Università degli Studi di MODENA e REGGIO EMILIA
2011	27	HIGH MECHANICS AND AUTOMOTIVE DESIGN & TECHNOLOGY/MECCANICA AVANZATA E TECNICA DEL VEICOLO-2011	Università degli Studi di MODENA e REGGIO EMILIA
2010	26	INGEGNERIA PER L'AMBIENTE E IL TERRITORIO-2010	Politecnico di BARI
2010	26	HIGH MECHANICS AND AUTOMOTIVE DESIGN & TECHNOLOGY/MECCANICA AVANZATA E TECNICA DEL VEICOLO-2010	Università degli Studi di MODENA e REGGIO EMILIA
2009	25	INGEGNERIA PER L'AMBIENTE E IL TERRITORIO-2009	Politecnico di BARI
2009	25	HIGH MECHANICS AND AUTOMOTIVE DESIGN & TECHNOLOGY/MECCANICA AVANZATA E TECNICA DEL VEICOLO-2009	Università degli Studi di MODENA e REGGIO EMILIA
2008	24	INGEGNERIA PER L'AMBIENTE E IL TERRITORIO-2008	Politecnico di BARI
2008	24	METODI DI SIMULAZIONE E PROGETTAZIONE MECCANICA-2008	Università degli Studi di MODENA e REGGIO EMILIA
2007	23	INGEGNERIA PER L'AMBIENTE E IL TERRITORIO-2007	Politecnico di BARI
2007	23	METODI DI SIMULAZIONE E PROGETTAZIONE MECCANICA-2007	Università degli Studi di MODENA e REGGIO EMILIA
2006	22	INGEGNERIA PER L'AMBIENTE E IL TERRITORIO-2006	Politecnico di BARI
2006	22	METODI DI SIMULAZIONE E PROGETTAZIONE MECCANICA-2006	Università degli Studi di MODENA e REGGIO EMILIA
2005	21	INGEGNERIA PER L'AMBIENTE E IL TERRITORIO-2005	Politecnico di BARI
2005	21	PIANIFICAZIONE TERRITORIALE E URBANISTICA-2005	Politecnico di BARI
2004	20	INGEGNERIA PER L'AMBIENTE E IL TERRITORIO-2004	Politecnico di BARI
2004	20	PIANIFICAZIONE TERRITORIALE E URBANISTICA-2004	Politecnico di BARI
2003	19	INGEGNERIA PER L'AMBIENTE E IL TERRITORIO-2003	Politecnico di BAR

Supervisor of 8 PhDs: 6 of Engineering of Industry and Territory PhD School, University of Modena and Reggio Emilia, C.Castagnetti, E.Bertacchini, E.Boni, I.Toschi, R.Rivola, P.Rossi; 2 of Environmental and Territory Engineering PhD School of Polytechnic of Bari, A.Galeandro e M.G.Angelini. He has been co-supervisor of 12 PhDs.

Member of PhD Evaluation Commission: PhD final test in Geophysics (Geodesy sub-sector) in 2004 (XVII cycle) and in Geophysics (sub-sector Geodynamics) in 2005 (XVIII cycle), in Geophysics, 2006 (XIX cycle). University of Bologna.

Member of Evaluation Commission for confirmation in role of University Researchers (art. 31 del D.P.R. 382/80 and law 3 Luglio 1998, n. 210) 2004 and 2005-ssd ICAR/06.

Member of Evaluation Commission: PhD final test in "Geodetic and Topographic Sciences" XIX Cycle -University of Napoli, Parthenope.

External PhD Examiner at PhD schools of abroad Universities; the most recent is the evaluation of PhD thesis of Xavier Ochieng at University of Nottingham, Ningbo China, 2019

Principal invited lectures in Executive Master , Intensive courses, Summer Schools, Specialization Schools, Seminars and Workshop:

Lesson "Rilievo topografico e fotogrammetrico subacqueo" (Underwater surveying and photogrammetry), 1993-94, 1994-95, 1995-96, 1999-2000 e 2001 - Specialty School of Archaeology - UNIBO.

Lessons on Underwater Photogrammetry at School of Architecture University of Venezia, 1995-96 e 1996-97.

Courses and seminars of Informatics, Digital Images processing, Internet, Multimedia technologies close to private and public schools; among the others: Mimesis (1997) ENFAP (97 e 98) COFIMP (98 e 99) -

Lesson "Remote sensing" in 1999 at Scuola Superiore per l'organizzazione della città storica, del territorio e dei loro modelli di rappresentazione - Università degli Studi di Bologna - sede di Ravenna.

Laboratory of Remote sensing at Workshop Internazionale "Paesaggi del delta : progettare nei parchi e nelle aree protette" in 2000.

Lesson on "Il rilievo degli edifici monumentali" (Monumental buildings surveying) - Project Edilforma AFM/MIUR - Convenzione del 2.9.1998, 2002.

Lesson "Telerilevamento e analisi dei dati territoriali" (Remote sensing and space data analysis)- II° International Workshop "Paesaggi del delta: progettare nei parchi e nelle aree protette", 2002.

Lesson "Telerilevamento" (Remote Sensing) at first level executive Master "Telerilevamento e Sistemi Informativi Geografici", Università degli Studi di Bologna, Ravenna headquarters, 2003.

Lessons "Rilievo per il monitoraggio del territorio" (Surveying for deformation monitoring) at II level executive master DIMA ( Disaster management) funded within PON 2000/06, close Taranto Engineering Faculty, Polytechnic of Bari.

Lesson "Monitoraggio di veicoli e flotte" (Vehicles and Fleets monitoring) at II Level Executive Master MANTRA "Programmazione e gestione di sistemi di trasporto" ( Planning and management of transport systems) funded within PON 2000/06 Avv. 4391/01, close Taranto Engineering Faculty, Polytechnic of Bari.

Lesson of Module TEC-5: Strumentazione per le misure di deformazione tramite GPS (Instruments for deformation measurements with GPS)- del Progetto di Alta Formazione VULCAMED - PO-Na3\_00278 funds - 2014.

Lessons " Geomatics for environmental and structural monitoring" at the FIG (Federation International des Geometres) and CNGeGL ( Consiglio Nazionale dei geometri e Geometri laureti) International School of Atene, Settembre 2011; e Madrid, Settembre 2012, Lisbona ottobre 2013.

Lessons of "Geomatica" (Geomatics) at al Scuola Edile di Reggio Emilia, 2017 and 2018.

Webinar -Geomax -"Geomatica per il monitoraggio delle deformazioni-Concetti" e Geomatica per il monitoraggio delle deformazioni-Applicazioni" ( Geomatics for deformation monitoring) - i 2020.

Webinar -SIFET (Italian Society of Photogrammetry and Topography) -"Underwater photogrammetry" - 2020.

Seminary on "Strumenti e tecniche di monitoraggio deformazioni" ( Instruments and technique on deformation monitoring) within Executive Master on "After the Damages- 2020.

## 6. Professional Activity

Principal agreements with public and private entities within Istituto di Topografia, Geodesia e Geofisica Mineraria, DISTART Dept (UNIBO) e DIASS Dept. (Taranto, Polytechnic of Bari) from 1990 to 2005 :

Processing and analysis of leveling network data and GPS data for subsidence control of in Bologna and Ravenna areas.

Project of GPS geodetic network densification for cadaster and geodetic reference in Bologna area and in provinces of Emilia Romagna region.

Deformation monitoring of Boretto (RE) church , S. Francesco Church (RA), Physiology Dept. UNIBO, Academy of fine arts, FFSS farm in Saline Ioniche (RC), Bank of Italy in Modena.

Drafting of the specifications and activity testing for "Bathymetric surveying control of caves for sediment cultivation" in Ravenna.

GPS network surveying and data processing for stability control of oil exploitation AGIP drills in sea and on land in Ravenna area.

Scientific Responsible of an MoA between DIASS and Plans Society (Noci, Bari) for surveying and 3D restitution of Castel del Monte (BA) for virtual museum creation, within regional law Puglia 598 - technology transfer to SME.

Principal agreements with public and private entities within DIMeC Dept., DIF (Engineering Dept. "Enzo Ferrari" ) Dept., UNIMORE, since 2006:

Responsible of GNSS network Project of Puglia region 2006 (50 000 euro).

Responsible of the Agreement with Emilia Romagna Technical Service for PO basin and right side tributaries -"Valoria landslide monitoring"- 2006 (30 000 euro)

Responsible of “Surveying and monitoring of Ghirlandina Tower Modena” - Modena Municipality 2007

Responsible of “ Scientific advice and technical assistance in data processing and determination of transformation parameters in ITALPOS net “ Leica Geosystems Italia, 2007.

Responsible of “Surveys and map- Reno Vivo” project - Province of Bologna, 2007.

Responsible “Surveying and monitoring of Sagra Tower in Carpi(Modena) -Carpi municipality, 2008.

Responsible for “ G.I.S. for vehicles flux and traffic control “ Modena province, 2008.

Responsible for Modena Come surveying and monitoring” Capitolo Metropolitan di Modena, 2008.

Responsabile scientifico del progetto di realizzazione di un sistema integrato di navigazione per flotte di veicoli di autoscuole- incarico della Provincia di Modena, 2009.

Responsible for “ Asinelli tower surveying and monitoring-Bologna” -Bologna municipality and MODO SA enterprise (San Marino), 2009.

Responsible of “ ex -SS Annunziata complex surveying -Bologna” -Regional Directorate for Architectural and Landscape Heritage - Emilia Romagna region, 2010 (70 000 euro).

Responsible of “Laboratory for topographic, GNSS, photogrammetric instruments testing” - Leica Geosystems SpA, 2011

Responsible “ High resolution laser scanning surveying of sculptural elements of Ghirlandina tower” -Modena municipality, 2011 (40 000 euro)

Responsible “Surveys for Modena Dome monitoring” -Basilica Metropolitana del Duomo, 2011

Responsible of “Landslide Consolidation in Berceto (Parma)” project . Parma Province, 2011.

Responsible of “ Santo Stefano Seven churches complex -Bologna” - Regional Directorate for Architectural and Landscape Heritage-Emilia Romagna Region, 2012

Responsible of “ Pheasability study of MIDA lab on psycho-fiscal state of the driver “ project - Ferrari spa, 2013

Responsible of “ Activation of MODALAB lab on psycho-fiscal state of the driver “ project Ferrari spa, 2015

Principal professional activities and advices for public and private entities:

Off-shore and land surveys and positioning, geophysical prospections , seismic profiles, control and positioning of submersed pipelines,(GSO s.p.a., Pianoro-Bologna) from 1985 to 1996;

Planning and realization of Maps within Vulnerability program (NIER, Bologna), 1989;

GPS surveys in Lipari, Isola d'Elba and Civitavecchia for sea prospection positioning , GPS data processing, and reference systems transformation(GAS Service, Bologna), 1996;

Topographic and photogrammetric surveying of archaeological submersed structures - Direction of Archaeological Heritage di Capri, della Liguria e della Emilia-Romagna from 1990 to 2005;

Planning of aerial GCP for photogrammetric surveying og large scale map (1:1 000, 1:2 000) (SIT-Municipality di Bologna), 1999;

Pheasability study for Cultural Heritage surveying and cataloging - ASCA, Latina, 1999 ;

Member of Commission for the test of large scale (1:2000) map of Bologna Municipality, 2000-2003.

Digitalization and georeferentation of large scale maps in Bari Province and digitalization of technological plants ( hydraulic net) for a GIS - Società Acquedotti Pugliesi, 2000;

Surveying for “ Study of dune systems of Ravenna coast” -Municipality of ravenna 2001.

Environment Impact Evaluation for a road construction close to Ponte Punta Penna –Pizzone in Talsano (TA) - Taranto, 2001;

Professional advice for mapping, remote sensing and GPS systems elaboration - S.M.A. s.p.a. ,Firenze, 2002-03;

Environmental Screening of road plan, art.11- L.R. 79/98, for the motorway junction between FI-SI highway and FI-PI-LI freeway, lots IV-V-VI- INFRATEC s.r.l. Engineering Consultino di Verona, 2001-02;

Responsible of Mapping and SIT Team within activity plan between Polytechnic of Bari and n ARPA ( Agency for environmental protection) Puglia Region for characterization plan of polluted site innTaranto, 2003.

Environment Impact Evaluation of the project of landscaping and tourism enhancement in Castel Mezzano e Pietrapertosa, Potenza, Area of EU interestSIC-Regione Basilicata Dolomiti di Pietrapertosa IT9210105, 2004

Environmental impact evaluation for “Excavation activity of Lamastuola (Cri- spiano-TA)- ILVA s.p.a.,2004, and “Bufaloria” di Martina Franca (Taranto), 2005

Supervision and test of large scale map ( 1:1000) of the port of Taranto - 2004-2005.  
 Underwater photogrammetric surveying of submersed archaeological site in Cala Micciola, Isola di Levanzo ( Egadi,Trapani). Ditta teknomar, 2005  
 Testing of large scale ( 1:5000, 1:2000 and 1:500) map of Comune di Modugno (Bari). 2005  
 Member of judging Commission technical map at scale 1:2000 production, frame of Municipality GIS,Bari, 2004.  
 Bathimetric surveys on Puglia coast, Taranto province, Ambito 5 area 27 e area 28 - MED INGENERIA s.r.l. di Ferrara. 2006  
 Professional advice form Leica Geosystems I.l.c. on surveying applications: ITALPOS Leica GNSS NRS ( Network Reference Station ) activities; new products testing and on structures an territory monitoring; teaching and training activity; editorial activity 2010-2013.  
 Member of "Nucleo di Valutazione del comparto attività produttive " for the damages evaluation occurred during floods in Modena Province 2012 and 2013 , within the accordance between RER Deputy Chair and the Province of Modena, 2014.  
 Professional advice on "Progettazione sistemi di monitoraggio deformazioni-attività di ricerca applicata e formativa" (Design of deformation monitoring systems- applied research and training activity) -Geomax I.l.c, 2019

## 7. List of Publications

Articles on Journals

Books

Contribution to Books( chapter or monograph)

Proceedings

Other

Articles on Journals

(1989) Capra A., Gasperini L., Gasperini M., Postpischil D.

"Bathymetric and seismic reflection survey of a landslide lake". Bollettino di oceanologia teorica ed applicata, vol.VII n° 3, pp.207-217, Trieste, Luglio 1989. ISSN:0393-196X.

(1990) Manzoni G., Capra A., Crisman B., Vattovani D.

"Rilievi su binari ferroviari con il GPS in movimento". Rivista -Rassegna Tecnica del Friuli Venezia Giulia-, n.6, anno XLI, pp.21-25, Trieste, Nov.-Dic. 1990.

(1991) Capra A., Russo P., Selvini A.

"Test di controllo e taratura per i teodoliti integrati: risultati di prove sperimentali con- dotte sul teodolite elettronico integrato Zeiss mod.Elta 3 ". Rivista del Catasto e dei Servizi Tecnici Erariali, anno XLVI, n.2, pp.45-87,ISSN:0035-5860.

(1992) Capra A., Cefalo R., Manzoni G., Patrono A.

"Analisi della ripetibilità del metodo GPS differenziale". Bollettino della SIFET (Società Italiana di Fotogrammetria e Topografia), vol.1, pp.113-132.ISSN:0392-4424.

(1992) Baratin L., Capra A., DiThiene C., Folloni G., Guerra F., Lombardini G., Russo ., Stumpo D., Trevisan C., Vittuari L.

Pseudo-metric analytical photogrammetric system: comparisons and controls. THE INTERNATIONAL ARCHIVES OF THE PHOTOGRAMMETRY, REMOTE SENSING AND SPATIAL INFORMATION SCIENCES, vol. ISPRS Archives vol, XXIX part B5, p. 372-379, ISSN: 1682-1777

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Non-Conventional System in Underwater Photogrammetry. THE INTERNATIONAL ARCHIVES OF THE PHOTOGRAMMETRY, REMOTE SENSING AND SPATIAL INFORMATION SCIENCES, vol. XXIX Part B5, p. 234-240, ISSN: 1682-1777

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Applicazioni del metodo GPS differenziale. Bollettino della SIFET, 4, pp. 69-86, ISSN: 0392-4424.

(1993) Baratin L., Capra A., DiThiene C., Folloni G., Guerra F., Lombardini G., Russo P., Stumpo D., Trevisan C., Vittuari L.

"Alcune prove sperimentali per la verifica della precisione di sistemi fotogrammetrici non convenzionali". Bollettino della SIFET, 1, pp. 111-129,ISSN:0392-4424.

(1994) Capra A.

Application of underwater photogrammetry for the deformation control of submerged objects. THE INTERNATIONAL ARCHIVES OF THE PHOTOGRAMMETRY, REMOTE SENSING AND SPATIAL INFORMATION SCIENCES, vol. XXX part 5, p. 16-22, ISSN: 1682-1777

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- Applicazioni non navigazionali del posizionamento dinamico in tempo reale. BOLLETTINO DELLA SOCIETÀ ITALIANA DI TOPOGRAFIA E FOTOGRAMMETRIA, vol. vol.n.2, p. 21-29, ISSN: 0392-4424
- (1994) Bondesan A., Capra A., Gubellini A., Tison J.L.  
On the use of static GPS measurements to record the tidal response of a small antarctic ice shelf (hells Gate ice shelf-Victoria Land). GEOGRAFIA FISICA E DINAMICA QUATERNARIA, vol. 17, p. 123-129, ISSN: 0391-9838
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Reti GPS per il controllo di deformazioni: analisi dei risultati ottenuti con differenti programmi di elaborazione dati. BOLLETTINO DELLA SOCIETÀ ITALIANA DI TOPOGRAFIA E FOTOGRAMMETRIA, vol. vol. n.4, p. 133-144, ISSN: 0392-4424
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Kinematic GPS Profiles and Navigation in Antarctica. THE INTERNATIONAL ARCHIVES OF THE PHOTOGRAMMETRY, REMOTE SENSING AND SPATIAL INFORMATION SCIENCES, vol. XXI part 1, p. 31-35, ISSN: 1682-1777
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Italian geodetic researches in Antarctica and International Collaboration. THE INTERNATIONAL ARCHIVES OF THE PHOTOGRAMMETRY, REMOTE SENSING AND SPATIAL INFORMATION SCIENCES, vol. ISPRS ARchives vol., XXXII part 6 W1, p. 75-79, ISSN: 1682-1777
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- (1999) Capra A., Gandolfi S., Lusetti C., Stocchino C., Vittuari L.  
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## Contribution to Books (chapter or monograph)

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Programma di rilievo per il controllo di scorrimenti visco-plastici del terreno. *Esperienze GPS* vol.II, a cura di Giorgio Manzoni, Istituto di Strade e Trasporti, pp.39-49, Università degli Studi di Trieste, Trieste.

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