

PERSONAL INFORMATION



Cristina CASTAGNETTI



Italy

Nationality Italian

STUDIES APPLIED FOR

Interested in multidisciplinary applied research addressed to geomatics engineering problem solving by means of innovative techniques. Potential field of applications: structural and environmental monitoring, geosciences, cultural heritage conservation and marine geomatics applications. She is also involved in BIM and digital construction research.

WORK EXPERIENCE

Nov 2018- to date

Associate Professor

Associate professor of Geomatics (S.S.D. ICAR/06 – 08/A4)

University of Modena and Reggio Emilia, Department of Engineering 'Enzo Ferrari',
via Vivarelli, 10 - 41125 Modena (Italy)

University – research and education

2023 – 2026

SIFET Council

Member of the SIFET Board of Directors

SIFET – Società Italiana di Fotogrammetria E Topografia.
Sede legale: via Cavour 179/A Il piano - 00184 Roma

Scientific Association

2019-2022

SIFET Scientific Committee

Member of the SIFET Scientific Committee

SIFET – Società Italiana di Fotogrammetria E Topografia.
Sede legale: via Cavour 179/A Il piano - 00184 Roma

Scientific Association

Apr. 2018 – Sept. 2018

Research grant

Research activity about integrated technologies for geodetic monitoring and navigation positioning

University of Modena and Reggio Emilia, Department of Engineering 'Enzo Ferrari',
via Vivarelli, 10 - 41125 Modena (Italy)

Advanced research

May 2017 – Dic. 2019

Contract Professor, Member of the Scientific Committee and the Education Committee

Professor at the Master "eBIM – Existing Building Information Modeling per la gestione dell'intervento sul costruito".

University of Ferrara, Department of Architecture, via Della Ghiara, 36 – 44121 Ferrara (Italy)

University education

May 2014 – Dec. 2019

Co-founder and Vice-President

Co-founder of the academic startup GEIS – Geomatics Engineering Innovative Solutions Srl
Via Vivarelli, 2 - 41125 Modena (Italy)

Chief Research Officer: R&D in the field of geomatics engineering

Apr. 2016 – Mar. 2018

Postdoctoral research fellow

Research in the field of geospatial data processing for deformation monitoring

University of Modena and Reggio Emilia, Department of Engineering 'Enzo Ferrari',
via Vignolese, 905 - 41125 Modena (Italy)

Advanced research

- Feb. 2012 – Jan. 2016 Postdoctoral research fellow
 Research in the field of integrated systems for deformation monitoring
 University of Modena and Reggio Emilia, Department of Engineering 'Enzo Ferrari',
 via Vignolese, 905 - 41125 Modena (Italy)
 Advanced research
- Sept. 2012 – May 2015 Contract Professor
 Professor of the class "Geomatics" (9CFU) for the degree in Civil and Environmental Engineering
 University of Modena and Reggio Emilia, Department of Engineering 'Enzo Ferrari',
 via Vignolese, 905 - 41125 Modena (Italy)
 University education
- Jan. 2011- Dec. 2018 Editorial board
 Management of the activities related to the peer-review journal Bollettino SIFET (review process,
 publication, etc.) and organization of the annual national conference.
 SIFET – Società Italiana di Fotogrammetria E Topografia
 Piazza del Carmine – 09124 Cagliari
 Collaboration with a scientific association of topography
- May. 2014 Teacher
 Advanced training course "Esperto in Ingegneria della Ricostruzione" funded by Emilia-Romagna Region
 for improving expertise in post-seismic interventions (8 hours).
 Confimi Formazione Emilia, 41123 Modena (Italy)
 Professional education
- Jan. 2014 Teacher
 Advanced training course "Vulcamed", lessons about the progress of Global Navigation Satellite
 Systems' (12 hours).
 INGV – National Institute of Geophysics and Volcanology, Osservatorio Etno, 95125 Catania (Italy)
 Collaboration for research training
- Sept. 2013 Teacher
 Technical courses 'Theory and practice about the use of GNSS for cadastral applications' (32 hours).
 Collegio Geometri e Geometri Laureati della Provincia di Bolzano, P.zza Walther, 28 - 39100 Bolzano
 Collaboration for technical training the field of surveying
- Apr. 2013 Teacher
 Technical courses 'Structural and environmental monitoring by means of total station' (8 hours).
 Geotop S.r.l., via Brece Bianche, 152 – 60131 Ancona (Italy)
 Collaboration for technical training in the field of surveying
- Feb. 2011 – Jan. 2012 Advanced research grant
 Research focused on survey and data processing by means of GNSS systems for geodetic and
 geodynamic applications and for deformations identification.
 University of Modena and Reggio Emilia, Department of Civil and Mechanical Engineering
 Research
- Sept. 2010 – Sept. 2011 Contract Professor
 Professor of the class "Geomatics" (12CFU) for the degree in Research, documentation and protection
 of archaeological heritage
 University of Bologna, Faculty of Conservation of Cultural Heritage
 Via Zamboni, 33 - 40126 Bologna (Italy) - Campus of Ravenna
 University education

- Apr. 2010 – Oct. 2010 Advanced research grant
Research focused on monitoring landslides risk by means of Geo-spatial Information Systems (GIS), testing and implementation
University of Modena and Reggio Emilia, Department of Civil and Mechanical Engineering, via Vignolese, 905 - 41125 Modena, Italy
Research
- Apr. 2010 – May. 2010 Collaborator to research project
Participation in the development of integrated navigation systems (GNSS/IMU) for slow-moving vehicles
University of Modena and Reggio Emilia, Department of Civil and Mechanical Engineering, via Vignolese, 905 - 41125 Modena, Italy
Applied research
- Nov. 2008 Teacher
Technical course about the use of GNSS systems for Lidar applications (training programme funded by the European Union).
Società di Ingegneria Geocart S.r.l., viale del Basento 120 - 85100 Potenza (Italy)
Collaboration for technical training in the field of surveying and data processing
- 2008-2011 Teacher
Regular collaborations for technical courses about the use of GNSS systems, best surveying practices and data processing
Leica Geosystems S.p.A., via Codognino, 12 – 26854 Cornegliano Laudense (LO, Italy)
Collaboration for technical training in the field of surveying and data processing

EDUCATION AND TRAINING

- 12 Apr. 2017 – 12 Apr. 2023 National qualification to Associate Professor at University (08/A4 GEOMATICS)
Positively evaluated at the qualifying exam for Associate Professor in the scientific area of Geomatics
Delivered by the Italian Ministry of Education, University and Research - MIUR
- 5-6 Oct. 2015 English training course How to present the perfect pitch
Two days of training by Beth Suzanne, Silicon Valley pitch coach
Organized by ASTER, Regione Emilia Romagna within the EU EIT - Climate KIC Acceleration Programme in Bologna (IT)
- 8 and 24 Sept. 2015 Training course Customer discovery strategy
Two days of training by Francesco Inguscio, CEO at Nuvolab
Organized by ASTER, Regione Emilia Romagna within the EU EIT - Climate KIC Acceleration Programme in Bologna (IT)
- 29-30 June 2015 Master Class Entrepreneurial Marketing
Two days of english training course by Rajiv Lal, Professor at Harvard Business School
Organized by EU EIT - Climate KIC Acceleration Programme in Copenhagen, Denmark
- 26-27 March 2015 Master Class Lean startup
Two days of english training course by Bernhard Doll, Managing Director of Orange Hills GmbH
Organized by EU EIT - Climate KIC Acceleration Programme in Bologna, Italy
- July 2014 English Boot Camp of Clean Launch Pad Italy 2014 - Bologna
Two days of training in business management for CleanTech startups
Organized by ASTER, Regione Emilia Romagna within the EU EIT - Climate KIC Programme
- 4-5 May 2012 Technical seminar: Reference Frame in Practice
Topics: modern geodesy, international terrestrial and regional reference frames, 4D datums
IAG/FIG Commission 5/ICG

- Oct. 2009 – Dec. 2009 Visiting scholar
Research activities at the SPIN, Satellite Positioning and Inertial Navigation Laboratory - The Ohio State University, under the supervision of prof. Dorota Grejner-Brzezinska. Main topics: methods and algorithms of GNSS/IMU integrated systems for land-based navigation.
The Ohio State University, Dept. of Civil and Environmental Engineering and Geodetic Science
Columbus, OH (United States)
- Jan. 2007 – Dec. 2009 Phd, 30/03/2010
PhD school in High mechanics and automotive design and technology – Design of high performance materials
Thesis title: “GPS-aided land-based navigation and precision farming applications: improving GPS solutions by means of MEMS IMU and low-cost sensors”
University of Modena and Reggio Emilia, via Università 4 – 41125 Modena (Italy)
- 18 - 19 March 2009 Training course: Definiens – OBJECT-ORIENTED classification
Topics: Image classification and segmentation
Telespazio, Roma
- 16 -20 June 2008 Training course: FREE and OPEN SOURCE GIS and GEODATABASE - theory and applications
Topics: open source GIS and geodatabases
University of Trento
- 2004 - October 2006 Second level degree in Environmental Engineering with first class honours (26/10/2006)
Degree class 38/S: Environmental engineering (D.M. 509/1999)
Thesis title: “Studio e sperimentazione del GPS in modalità di posizionamento navigazionale e in modalità cinematica. Applicazione particolare all’agricoltura di precisione”.
University of Modena and Reggio Emilia – Faculty of Engineering, Modena
- 2001 - 2004 First Level Degree in Environmental Engineering with first class honours (15/12/2004).
Degree class 8: Civil and environmental engineering
Thesis title: “Aspetti energetici e sanitari nel trattamento anaerobico dei fanghi di depurazione”.
University of Modena and Reggio Emilia – Faculty of Engineering, Modena
- 1996-2001 Scientific high school graduation
Liceo Scientifico Statale ‘Aldo Moro’, Reggio Emilia, with 100/100.

AWARDS

- 21 April 2015 MIT Innovators Under 35 – Italy 2015
Winner at the Italian competition ‘Innovators under 35 – 2015 edition’ awarded by MIT Technology Review Italy.
- 19 October 2016 Innovation Award – 2016 edition
Winner of the innovation award for young female researchers involved in technology, awarded by Zonta Club International of Reggio Emilia
- 8 March 2017 Reggiane per esempio Award – 2017 edition
Winner of the local prestigious award *Example women living in Reggio Emilia – young manager category* awarded by Reggio Emilia Municipality after a special commission evaluation. Motivation “For the extraordinary professional commitment, her talent and expertise in the field of environmental engineering. For the passion with which she devoted herself to protect the environment by showing her personal predisposition to the world's attention”.
- 23 June 2017 SIFET2017 Best Poster Award – Topic Archaeology
Winner of the best poster award for the topic archaeology during the 62nd national conference organized by the Italian Society of Photogrammetry and Topography, SIFET, in Ragusa 21-23/06/2017

PERSONAL SKILLS AND COMPETENCES

- Mother tongue(s) **Italian**
- Other language(s) **English, French**

Self-assessment

European level (*)

English

French

Understanding				Speaking				Writing	
Listening		Reading		Spoken interaction		Spoken production			
C1	Proficient use	C1	Proficient user	C1	Proficient use	C1	Proficient use	C1	Proficient use
A2	Basic user	A2	Basic user	A2	Basic user	A2	Basic user	A2	Basic user

(*) [Common European Framework of Reference for Languages](#)

Certificates DELF A1, A2, A3, A4 for the knowledge of French language delivered by French Republic in 2001.

Social skills and competences

Great potential to cooperation and team work. Collaborative attitude and skills to establish permanent relations, share experiences with the purpose of self improvement . Skill and experience in preparation of reports and speeches for conferences (oratory skills, editing graphics and construction of multimedia products).

Organisational skills and competences

Great ability to work organization and multidisciplinary team coordination; initiative and inventiveness in the research project development. Participation in the organization of several meetings and workshops. Competences in the coordination of surveys and monitoring campaigns, in Italy and abroad (Argentina, Peru, Croatia) for archeological purposes, unstable slopes monitoring and subsidence.

Technical skills and competences

Familiar with surveying instruments and methods such as total station, GNSS (Global Navigation Satellite System), digital level, laser scanning, multi-sensors systems and data processing and analysis through several specific softwares.

Computer skills and competences

Competent with most of Microsoft Office programs (Word, Excel, Power Point, Access) as well as graphic design applications (Adobe PhotoShop); specific software for data visualization such as ArcGIS 9.2, Autocad 2007, for GPS data processing Grafnav, LeicaGeoOffice LGO, Trimble Geomatic Office TGO, for image processing Photoscan Agisoft, for network adjustment Starnet 6.0, for laser scanning Cyclone 6.0; for photogrammetry MicroMap 2.2; internet navigation and Matlab programming language.

Licence (s)

Italian driving licence (category B)
Licence to practice as an Engineer (achieved in December 2006)
Diving licence, ARA 1° grado FIPSAS/1 Stella CMAS
Diving licence, ARA 2° grado FIPSAS/2 Stella CMAS
Patent specialty 'diving at night or in reduced visibility'

Personal Interest (s)

Enjoy all sports particularly swimming, diving, cycling. Love for travelling and experiencing different cultures and food. I like to spend time with my family and friends.

Profiles

Academic personal webpage: <https://unimore.unifind.cineca.it/get/person/070831>

ADDITIONAL INFORMATION

Teaching activities

Since 2007, manager of the MOPS permanent station, included within the European Permanent Network - EPN

Since 2018, Cristina has been teaching undergraduate and postgraduate courses in applied geomatics, precision surveying and monitoring, 3D modeling and BIM and geomatics for geohazards at University of Modena and Reggio Emilia.

She previously served as contract professor in geomatics for cultural heritage at University of Bologna, Faculty of Conservation of Cultural Heritage and University of Ferrara, Department of Architecture. Cristina has also served as lecturer/tutor in national and international summer schools and tutorials focused on geomatics applications.

Cristina has also been scientific supervisor of postdoctoral grants and postgraduate scholarships within the activities of her research projects.

Cristina has served as member of PhD examination committee on underwater photogrammetry.

Since 2014 Cristina has been contributing to knowledge transfer and advanced training to professionals and private companies in the field of geomatics, satellite positioning with GNSS, 3D surveying and laser scanning, geospatial data processing.

She is currently the responsible of an agreement with Collegio dei Geometri e Geometri Laureati di Reggio Emilia for training and practice in geomatics.

She has been acting as supervisor and co-supervisor of several MS Degree Theses in Civil and Environmental Engineering and in Geosciences.

Administrative roles and responsibilities

Cristina has held roles of responsibility and coordination, within her Department and beyond, for several years.

2024 to date: Member of the Research Commission at the Department of Engineering 'Enzo Ferrari', University of Modena and Reggio Emilia

2019 to date: Member of the Technology Transfer and Public Engagement Commission at the Department of Engineering 'Enzo Ferrari', University of Modena and Reggio Emilia

2023–2026: Member of the Executive Board of SIFET, Società Italiana di Fotogrammetria E Topografia

Since 2021: Member of CRICT-UNIMORE, Interdepartmental Center for Research and Services in the Construction and Land Use Sector, holding the roles of Communication and Website Manager, Responsible for the Accreditation Commission, Head of the Engineering Operating Unit

2020-2024: Member of the Quality Assurance Commission at the Department of Engineering 'Enzo Ferrari', University of Modena and Reggio Emilia

2019-2022: Member of the Scientific Committee of SIFET, Società Italiana di Fotogrammetria E Topografia

2014- 2019: Co-founder and Vice-President of the academic startup GEIS – Geomatics Engineering Innovative Solutions Srl

Scientific Dissemination

Cristina has been participating to several national and international conferences and symposiums presenting and discussing the results of her research activities.

Editorial activity

2023: Member of the Scientific Committee of the 29th CIPA Symposium "Documenting, Understanding, Preserving Cultural Heritage. Humanities and Digital Technologies for Shaping the Future"

2019-2022: Editorial Board Member of Bollettino SIFET, national peer review journal

2011-2018: Manager of the Editorial Board of Bollettino SIFET, national peer review journal

2011-2018: Editorial Manager Assistant of the international peer-review journal Applied Geomatics, edited by Springer

Since 2010 Cristina regularly contributes to peer-review activities in the fields of geomatics, environmental and structural monitoring, photogrammetry, laser scanning, 3D modeling and BIM. She is also included within the REPRISE Database, Register of Expert Peer Reviewers for Italian Scientific Evaluation.

Membership of scientific societies

Cristina is member of AUTeC – Associazione Universitari di Topografia e Cartografia and SIFET – Società Italiana di Fotogrammetria e Topografia, where she was elected to the Executive Board for the 2023–2026 term and to the Scientific Committee for the 2019- 2022 term.

At international level, she was involved in CIPA – International Committee of Architectural Photogrammetry, within the scientific communities of 3D cultural heritage documentation

Scientific Publications

Public views: *ORCID* orcid.org/0000-0002-6591-4802
Web of Science/Publons - [Researcher ID N-2298-2016](https://publons.com/author/6122298/)
Scopus ID [32367543400](https://scopus.com/authid/detail.uri?authorid=32367543400)
Research gate [Cristina Castagnetti](https://www.researchgate.net/profile/Cristina-Castagnetti)
Google Scholar [Cristina Castagnetti](https://scholar.google.com/citations?user=Uj8vYwQAAAAJ)

h-index: Scopus=16 (666 citazioni); Google Scholar=21 (1102 citazioni) – 18.06.2026.

- Journals**
- 2026 Cassanelli, D., Rossi, P., Cenni, E., Cattini, S., Righi, S., Simonini, R., ... & Castagnetti, C. (2026). Design and characterization of a portable fluorescence measuring system for the on-site monitoring of marine bio-constructors. *IEEE Transactions on Instrumentation and Measurement*. DOI: 10.1109/TIM.2026.3687301
- 2025 Grassi, F., Rossi, P., Brunelli, B., Mancini, F., Castagnetti, C., Vincenzi, L., ... & Capra, A. (2025). Ensembling satellite monitoring and numerical cartography towards the safety assessment of infrastructures. *Applied Geomatics*, 17(2), 401-410. DOI: 10.1007/s12518-025-00625-7
- 2023 Kopecky, K.L., Pavoni, G., Nocerino, E., Brooks, A. J., Corsini, M., Menna, F., Gallagher, J.P., Capra, A., Castagnetti, C., Rossi, P., Gruen, A., Neyer, F., Muntori, A., Ponchio, F., Cignoni, P., Troyer, M., Holbrook, S.J. & Schmitt, R.J. (2023). Quantifying the loss of coral from a bleaching event using underwater photogrammetry and AI-assisted image segmentation. *Remote Sensing*, 15(16), 4077, DOI:10.3390/rs15164077.
- 2023 Castagnetti, C., Rossi, P., Righi, S., Cattini, S., Simonini, R., Rovati, L., & Capra, A. (2024). Potentialities of the combined use of underwater fluorescence imagery and photogrammetry for the detection of fine-scale changes in marine bioconstructors. *Frontiers in Marine Science*, 10, 1305807. DOI: 10.3389/fmars.2023.1305807.
- 2022 Parente, L., Falvo, E., Castagnetti, C., Grassi, F., Mancini, F., Rossi, P., & Capra, A. (2022). Image-Based Monitoring of Cracks: Effectiveness Analysis of an Open-Source Machine Learning-Assisted Procedure. *Journal of Imaging*, 8(2), 22, DOI: 10.3390/jimaging8020022.

- 2021 Rossi P., Ponti M., Righi S., Castagnetti C., Simonini R., Mancini F., Agrafiotis P., Bassani L., Bruno F., Cerrano C., Cignoni P., Corsini M., Drap P., Dubbini M., Garrabou J., Gori A., Gracias N., Ledoux J.B., Linares C., Mantas T.P., Menna F., Nocerino E., Palma M., Pavoni G., Ridolfi A., Rossi S., Skarlatos D., Treibitz T., Turicchia E., Yuval M., Capra A. (2021) "Needs and gaps in optical underwater technologies and methods for the investigation of marine animal forest 3D-structural complexity." *Frontiers in Marine Science* vol. 8 (2021): 171, DOI: 10.3389/fmars.2021.591292.
- 2020 Nocerino E., Menna F., Gruen A., Troyer M., Capra A., Castagnetti C., Rossi P., Brooks A.J., Schmitt R.J., Holbrook S.J. (2020) "Coral Reef Monitoring by Scuba Divers Using Underwater Photogrammetry and Geodetic Surveying", *Remote Sensing*, vol. 12(18), p. 1-26, DOI:10.3390/rs12183036.
- 2020 Rossi P., Castagnetti C., Capra A., Brooks A.J., Mancini F. (2020) "Detecting change in coral reef 3D structure using underwater photogrammetry: critical issues and performance metrics", *Applied Geomatics*, vol.2, p. 3-17. DOI: 10.1007/s12518-019-00263-w.
- 2019 Vincenzi L., Bassoli E., Ponsi F., Castagnetti C., & Mancini F. (2019). "Dynamic monitoring and evaluation of bell ringing effects for the structural assessment of a masonry bell tower", *Journal of Civil Structural Health Monitoring*, 9(4), 439-458, DOI: 10.1007/s13349-019-00344-9.
- 2019 Fazio N.L., Perrotti M., Andriani G.F., Mancini F., Rossi P., Castagnetti C., Lollino P (2019) "A new methodological approach to assess the stability of discontinuous rocky cliffs using in-situ surveys supported by UAV-based techniques and 3-D finite element model: a case study", *Engineering Geology*, DOI: 10.1016/j.enggeo.2019.105205.
- 2019 Castagnetti C., Bassoli E., Vincenzi L., Mancini F. (2019) "Dynamic Assessment of Masonry Towers Based on Terrestrial Radar Interferometer and Accelerometers", *Sensors*, 19(6): 1319, DOI: 10.3390/s19061319.
- 2019 Rossi, P.; Castagnetti, C.; Capra, A.; Brooks, A. J.; Mancini, F. (2019). "Potenzialità e problematiche nell'utilizzo della fotogrammetria subacquea per la misura dell'accrescimento di colonie coralligene [Evaluation of underwater photogrammetric performances in the assessment of coral reef 3D changes]", *BOLLETTINO DELLA SOCIETÀ ITALIANA DI FOTOGRAMMETRIA E TOPOGRAFIA*, vol. 2 p., 1-11, ISSN 1721-971X.
- 2019 Bassoli E., Ponsi F., Castagnetti C., Mancini, F.; Vincenzi, L. (2019) "Monitoraggio di strutture storiche mediante interferometria radar terrestre", in: *Atti del XVIII Convegno ANIDIS L'ingegneria Sismica in Italia: Ascoli Piceno, 15-19 settembre 2019*.
- 2018 Giannini M., Castagnetti C. (2018) "A multidisciplinary approach to document and visualize an archaeological site: The Villa d'Otium of Massaciuccoli (Massarosa, LU)(Article) / Un approccio multidisciplinare per documentare e visualizzare un sito archeologico: La villa d'otium di massaciuccoli (Massarosa, LU)", *Archeologia e Calcolatori* vol. 29(1): pp. 279-295, DOI: 10.19282/ac.29.2018.22.
- 2017 Mancini F., Castagnetti C., Rossi P., Dubbini M., Fazio N.L., Perrotti M., Lollino P. (2017) "An Integrated Procedure to Assess the Stability of Coastal Rocky Cliffs: From UAV Close-Range Photogrammetry to Geomechanical Finite Element Modeling", *Remote Sensing*, vol. 9(12): pp. 1-21, DOI: 10.3390/rs9121235
- 2017 Castagnetti C., Cosentini R.M., Lancellotta R., Capra A. (2017) "Geodetic monitoring and geotechnical analyses of subsidence induced settlements of historic structures", *Structural Control and Health Monitoring*, vol. 24(12): pp. 1-15, DOI: 10.1002/stc.2030.
- 2016 Castagnetti C., Mancini F., Rivola R., Rossi P., Oppici S., Albano V., Formentini M. (2016) "Potentiality of the new wearable systems for 3D scanning an experimentation of Pegasus Backpack by Leica Geosystems at the Ducal Palace of Modena", *Archeomatica* VII(4): pp.34-37, MediaGEO Editore, Roma; ISSN 2037-2485.
- 2016 Mancini F., Castagnetti C., Rossi P., Guerra F., Ballarin M., Visintini D., Garraffa A., Stecchi F., Aicardi I., Grasso N., Noardo F., De Luca V., Ratto Cavagnaro M., Caroti G., Piemonte A., Pinto L., Santise M., Albano V., Curuni M., Cerratti M., Abate G. (2016) "Achievement of the "benchmark" session - on the use of UAV images for 3D reconstruction: a joint experience among users" (held during the 61th SIFET meeting, Lecce, Italy, June 8-10, 2016)", *Bollettino SIFET*, 3/2016, pp. 88-96, ISSN 1721-971X.
- 2016 Rivola R., Castagnetti C., Bertacchini E., Casagrande F. (2016), "The geomatic techniques in support of the cultural properties. Digitalization and 3D print of a mosaic in Byzantine technique for documentation and conservation purposes", *Archeomatica*, VII(1): pp. 34-37.
- 2016 Castagnetti C., Bertacchini E., Capra A. (2016), "Monitoring leaning towers by geodetic approaches: Effects of subsidence and earthquake to the Ghirlandina Tower", *Structural Control and Health Monitoring*, issue 23(3): pp.580-593, DOI 10.1002/stc.1799.

- 2015 Capra A., Bertacchini E., Castagnetti C., Rivola R., Dubbini, M. (2015), "Recent approaches in geodesy and geomatics for structures monitoring", *Rendiconti Lincei* 26(1), pp. 53-61, DOI 10.1007/s12210-015-0436-z.
- 2013 Castagnetti C., Bertacchini E., Corsini A., Capra A. (2013), "Multi-sensors integrated system for landslide monitoring: critical issues in system setup and data management", *European Journal of Remote Sensing*, vol. 46, p. 104-124, ISSN 2279-7254, DOI 10.5721/EuJRS20134607.
- 2013 Corsini A., Castagnetti C., Bertacchini E., Rivola R., Ronchetti F., Capra A. (2013), "Integrating airborne and multi-temporal long-range terrestrial laser scanning with total station measurements for mapping and monitoring a compound slow moving rock slide", *Earth Surface Processes and Landforms*, vol. 38, p.1330-1338, ISSN 0197-9337, DOI 10.1002/esp.3445.
- 2012 Bertacchini E., Toschi I., Rivola R., Castagnetti C., Capra A. (2012), "Estrazione di DTM da una stereocoppia Worldview-1: procedure di orientamento, image-matching e rimozione degli edifici", *Bollettino della Società Italiana di Fotogrammetria e Topografia*, vol.2, p.49-68, ISSN 1721-971X.
- 2012 Castagnetti C., Capra A., Bedostri I., Bedostri T. (2012), "Mappatura GPS delle ippovie e individuazione siti di interesse culturale. Un WebGIS per il turismo equestre", *Geocentro*, vol. Anno IV n. 23, p.26-32.
- 2011 Capra A., Bertacchini E., Castagnetti C., Dubbini M., Rivola R., Toschi I. (2011), "Rilievi laser scanner per l'analisi geometrica delle torri degli Asinelli e della Garisenda", *INARCOS*, Anno LXVI vol. 4, p.35-42, ISSN 0391-6537.
- 2011 Rivola R., Bertacchini E., Castagnetti C., Toschi I., Capra A. (2011), "Registrazione di scansioni laser scanner: potenzialità del metodo diretto", *Bollettino della Società Italiana di Fotogrammetria e Topografia*, vol. 2, p.43-62, ISSN 1721-971X.
- 2010 Castagnetti C., Casula G., Capra A., Bianchi M. G., Dubbini M. (2010), "Adjustment and transformation strategies of ItalPoS Permanent GNSS Network", *Bulletin of Geodesy and Geomatics*, vol. LXIX n. 2-3, p. 299-317, ISSN 0006-6710.
- 2009 Bertacchini E., Capra A., Castagnetti C., Dubbini M. (2009), "Misure topografiche di precisione per il monitoraggio in zone a rischio idrogeologico", *AGIT Informa*, vol. Anno III n°11, p.12-19.
- 2009 Biagi L., Caldera S., Capra A., Castagnetti C., Sansò F. (2009), "Densification of IGS/EPN by local permanent networks: results sensitivity with respect to the adjustments choices", *Bulletin of Geodesy and Geomatics*, vol. LXVIII n. 3, p. 231-253, ISSN 0006-6710.
- 2009 Castagnetti C., Casula G., Dubbini M., Capra A. (2009), "Adjustment and transformation strategies of ItalPoS Permanent GNSS Network", *Annals of Geophysics*, vol.52 n. 2, p. 181-195, ISSN 1593-521-3.

Books (chapters)

- 2026 Ponsi, F., Castagnetti, C., Varzaneh, G. E., Bassoli, E., Mancini, F., & Vincenzi, L. (2026). Structural displacement estimation through data fusion of GNSS and acceleration data. In *Operational Modal Analysis* (pp. 26-41). CRC Press. DOI: 10.1201/9781003516941-3
- 2015 Mancini F., Capra A., Castagnetti C., Ceppi C., Bertacchini E., Rivola R. (2015), "Contribution of Geomatics Engineering and VGI Within the Landslide Risk Assessment Procedures", *Computational Science and Its Applications--ICCSA 2015*, vol. 9156, pp. 635-647, DOI 10.1007/978-3-319-21407-8_45.
- 2015 Bertacchini E., Capra A., Castagnetti C., Rivola R., Toschi I. (2015), "Rilievi metrici 3D laser scanning: la torre e le sculture", in: Cadignani R. (Ed), *La Torre Ghirlandina: cronaca del restauro e studi recenti*, e-book pp. 21-23, Modena, Luca Sossella Edizioni, ISBN 978-88-97356-31-8.
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- 2012 Bertacchini E., Capra A., Castagnetti C., Rivola R. (2012), "Investigating an Active Rockslide by Long-range Laser Scanner: Alignment Strategy and Displacements Identification", in: Proc. of FIG Working Week 2012, Rome, 6-10 May, ISBN 97887-90907-98-3.
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- 2011 Castagnetti C., Biagi L., Capra A. (2011), "Design of a Low-cost GPS/magnetometer System for Land-based Navigation: Integration and Autocalibration Algorithms", in: Proc. of FIG Working Week 2011, Marrakesh, 18-22 May 2011, ISBN 978-87-90907-92-1.
- 2010 Bertacchini E., Boni E., Capra A., Castagnetti C., Dubbini M. (2010), "Terrestrial Laser Scanner for Surveying and Monitoring Middle Age Towers", in: Proc. of XXIV FIG International Congress 2010, Sydney, Apr. 11-16, ISBN 978-87-90907-87-7.
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- 2010 Castagnetti C., Biagi L., Capra A. (2010), "GPS-Aided Land-Based Navigation and Precision Farming Applications: Improving GPS Solutions by Means of MEMS-IMU and Low-Cost Sensors", in: Proc. of the 23rd International Technical ION GNSS Meeting, Portland, Sept. 21-24, vol. 2, p. 1662-1666, ISBN 978-161782735-8.
- 2009 Bertacchini E., Capitani A., Capra A., Castagnetti C., Corsini A., Dubbini M., Ronchetti F. (2009), "Integrated surveying system for landslide monitoring, Valoria Landslide (Apennines of Modena, Italy)", in: Proc. of FIG Working Week 2009, Eilat, May 3-8, ISBN 978-87-90907-73-0.
- 2008 Biagi L., Capra A., Castagnetti C., Dubbini M., Unguendoli F. (2008), "GPS navigation for precision farming", ISPRS Archives, vol. XXXVI part 5/C55 p. 46-53, ISSN 1682-1777.

Participation in national and international research projects

2024-2026: *Scientific Responsible of local research unit and participant to the research project funded by the PNRA2022 call.* TITLE: "ICEGIANT - Integrated geodetic, geophysics and remote sensing observations for the study of David Glacier Cauldron icefall and the floating Drygalski ice-tongue". Scientific responsible UNIMORE: Prof. Cristina Castagnetti. Project Manager: Prof. Luca Vittuari, Unibo

2024-2026: *Scientific Responsible of local research unit and participation to research project PR-FESR 2021-2027 funded by Regione Emilia Romagna.* TITLE: "Adapted Information Management for existing Buildings Information Modeling (AIM-eBIM)". Scientific responsible RU CRIC-UNIMORE: Prof. Cristina Castagnetti. Project Manager: Prof. Federica Maietti, Teknehub Unife.

2023-2025: *Principal Investigator of the research project funded by the Italian Ministry of Research and University (MUR) through the support of European Commission - Next Generation EU funds (PRIN2022 under 40 call).* TITLE: "EUPHROSYNE: Enhancing Underwater PHotogrammetRy, fluOreScence imagerY and deep learning solutions for monitoring the health status of mediterrANEan corals" (CUP E53D23003980006).

2023-2024: *Scientific responsible and participant of the research project funded by University of Modena and Reggio Emilia (FAR2022 funds).* TITLE: "POSEIDON - Photogrammetry, Optical SENSors, and unmanned underwater vehicles for noninvasive large-scale monitoring of mEDiterranean benthic cOmmuNities and habitats".

2021-2022: *Participation to research project funded by University of Modena and Reggio Emilia (FAR2020 funds).* TITLE: "SIMBAD: Sistemi Innovativi di rilievo per il Monitoraggio ambientale e la ricostruzione 3D di organismi Biocostruttori mArini con Droni subacquei". Scientific responsible: prof. Capra, DIF – University of Modena and Reggio Emilia.

2019-2021: *Participation to research project POR-FESR funded by finanziato Regione Emilia Romagna.* TITLE: "InSPiRE - Integrated technologies for Smart Buildings and PREdictive maintenance". Scientific responsible RU CRICIT-UNIMORE: Prof. Capra. Project Manager: Prof. Balzani, Teknehub Unife.

2016-2018: *Participation to research project funded by Fondazione Cassa di Risparmio di Lucca, Bando 2016-2017-Ricerca.* TITLE: Visual Versilia 3D. ACTIVITIES: Testing 3D modeling and virtual augmented reality tools for enhancing the visit of Massaciuccoli Terme archaeological site. Responsible: prof. Capra, Centro E-GEA - University of Modena and Reggio Emilia.

2016-2017: *Participation to research project FAR2015 funded University of Modena and Reggio Emilia.* TITLE: Origin, development and transformation of Pieve della Sagra in Carpi (MO) within the topographical context of the town. ACTIVITIES: Development of technological tools for improving the enhancement of cultural heritage through virtual reality. Scientific responsible: dott.ssa Martina Giannini, University of Modena and Reggio Emilia. Duration: 18 months.

2015-2016: *Participation to the applied research project for the development of small industries (PMI) funded by Regione Emilia Romagna.* TITLE: Sviluppo di un approccio innovativo basato sulla tomografia a resistività elettrica ERT 3D eseguita con la tecnica cross-hole per la rilevazione dei problemi di liquefazione del sottosuolo e monitoraggio di terreni caratterizzati da elevata vulnerabilità sismica (project n°107). Scientific responsible: prof. A. Capra, University of Modena and Reggio Emilia. Proponent: G. Maselli.

2015-2016: *Participation to research project: Grande Progetto Pompei - Piano della Conoscenza funded by Ministero per i Beni e le Attività Culturali and by the European Community.* ACTIVITIES: Monitoring the conservation status of Lotto 3 by means of 3D digitizing integrated technologies. National Responsible: prof. Sassatelli, Dipartimento di Storia Culture Civiltà - Alma Mater Studiorum University of Bologna.

2014-2017: *Research agreement – Member of the scientific committee and participant.* TITLE: Research activities about the applications of proximal remote sensing by means of unmanned aerial systems (UAS) for civil protection purposes. Responsibles: prof. A. Capra, prof. A. Corsini. Research agreement between Centro inter-ateneo E-GEA c/o University of Modena and Reggio Emilia and Unione di Comuni Terre di Castelli.

2014-2016: *Participation to research project funded by Fondazione Cassa di Risparmio di Lucca, Bando 2014-2015-Ricerca.* TITLE: Visual Versilia. ACTIVITIES: Development of a cultural WebGIS for tourists in Versilia. Responsible: prof. Capra, Centro E-GEA c/o University of Modena and Reggio Emilia.

2014-2015: *Participation to research project. National Programme for Research in Antarctica (call 2013).* TITLE: Rilievo geodetico e geofisico per la modellazione geodinamica delle Terra Vittoria Settentrionale'. Responsible: prof. A. Capra, University of Modena and Reggio Emilia

2011-2013. *Research Agreement.* TITLE: Collaborazione tecnico-scientifica per acquisizione elaborazione e restituzione dei dati topografici della stazione totale, esecuzione dei rilievi Laser Scanner da terra e aviotrasportato della porzione di versante "il Piagneto" tra la confluenza Rio Biola e C. Piagneto con elaborazione e restituzione grafica dei risultati (SS 63 -Passo del Cerreto). PARTICIPANTS: University of Modena and Reggio Emilia (Department of Engineering Enzo Ferrari and Department of Chemical and Geological Sciences) and Collagna Municipality.

2011-2012: *Participation to research project. National Programme for Research in Antarctica (call 2010).* TITLE: Osservatorio Geodetico nella Terra Vittoria Settentrionale. Responsible: prof. A. Capra.

2008-2013. *Collaboration.* TITLE: Controllo topografico dei movimenti verticali del suolo e monitoraggio della torre. Torre della chiesa della Sagra – Comune di Carpi (Modena). PARTICIPANTS: Carpi municipality and University of Modena and Reggio Emilia (Department of Engineering Enzo Ferrari)

2012. *Partecipation to research project MAE (Ministero Affari Esteri) 2012, DGSP VI - Missioni archeologiche, antropologiche, etnologiche.* Title: MISSIONE "ANTONIO RAIMONDI", RICERCHE NELL'ECOSISTEMA DEL LAGO DI BREALITO (SALTA, ARGENTINA). Advisor. dr. Salsi, Milan.

2009-2010. *Research Agreement.* TITLE: Collaborazione tecnico-scientifica per acquisizione elaborazione e restituzione dei dati topografici della stazione totale, esecuzione dei rilievi Laser Scanner da terra e aviotrasportato della porzione di versante "il Piagneto" tra la confluenza Rio Biola e C. Piagneto con elaborazione e restituzione grafica (SS 63 -Passo del Cerreto)". PARTICIPANTS: Emilia Romagna Region – Servizio tecnico dei bacini degli affluenti del Po, Reggio Emilia - and University of Modena and Reggio Emilia (Department of Civil and Mechanical Engineering and Earth science Department)

2009: *Partecipation to research project MAE (Ministero Affari Esteri) 2009, DGPCC -- Missioni archeologiche, antropologiche, etnologiche.* Title: Missione Archeologica e Antropologica Italiana sulle Ande - Progetto "Antonio Raimondi". Responsible: dott. C. Salsi.

2008-2010. *Participation to research project within the Executive Cooperation Programme 2008-2010 - Joint Mobility Projects for the Exchange of Researchers between Italy and United states in the framework of science and technology.* TITLE: "GPS Monitoring of Geodynamics and Ice Sheets in Antarctica". Responsible Italy: prof. Alessandro Capra – University of Modena and Reggio Emilia. Responsible of US: prof. Terry Wilson – The Ohio State University.

2008-2009. *Research Agreement.* TITLE: Collaborazione tecnico-scientifica per il Monitoraggio Integrato Frana Boschi di Valoria (Frassinoro, Modena). Sviluppo di un sistema di monitoraggio strumentale con acquisizione e trasmissione in remoto di dati. PARTICIPANTS: Emilia Romagna Region – Servizio tecnico dei bacini degli affluenti del Po, Modena - and University of Modena and Reggio Emilia (Department of Civil and Mechanical Engineering and Earth science Department)

2008-2010. *Partecipation to PRIN (Progetto di Rilavante Interesse Nazionale) 2007.* Title: Multi-temporal Analysis and Surveying in the Framework of a Geo-Spatial Information System for the control of movement and deformation of Environmental Risk Areas. National Coordinator: Alessandro Capra, University of Modena and Reggio Emilia.

DATE Curriculum updated to June, 18th -2026