

**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, cultural heritage conservation and precision farming.

**WORK EXPERIENCE**

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|------------------------|--|
| Nov 2018- to date      | <p><u>Associate Professor</u><br/>Associate professor of Geomatics (S.S.D. ICAR/06 – 08/A4)<br/>University of Modena and Reggio Emilia, Department of Engineering ‘Enzo Ferrari’,<br/>via Vivarelli, 10 - 41125 Modena (Italy)<br/>University – research and education</p>   |
| 2023 – 2026            | <p><u>SIFET Council</u><br/>Member of the SIFET Board of Directors<br/>SIFET – Società Italiana di Fotogrammetria E Topografia.<br/>Sede legale: via Cavour 179/A Il piano - 00184 Roma<br/>Scientific Association</p>   |
| 2019-2022              | <p><u>SIFET Scientific Committee</u><br/>Member of the SIFET Scientific Committee<br/>SIFET – Società Italiana di Fotogrammetria E Topografia.<br/>Sede legale: via Cavour 179/A Il piano - 00184 Roma<br/>Scientific Association</p>  |
| Apr. 2018 – Sept. 2018 | <p><u>Research grant</u><br/>Research activity about integrated technologies for geodetic monitoring and navigation positioning<br/>University of Modena and Reggio Emilia, Department of Engineering ‘Enzo Ferrari’,<br/>via Vivarelli, 10 - 41125 Modena (Italy)<br/>Advanced research</p>   |
| May 2017 – Dic. 2019   | <p><u>Contract Professor, Member of the Scientific Committee and the Education Committee</u><br/>Professor at the Master “eBIM – Existing Building Information Modeling per la gestione dell’intervento sul costruito”.<br/>University of Ferrara, Department of Architecture, via Della Ghiara, 36 – 44121 Ferrara (Italy)<br/>University education</p> |
| May 2014 – Dec. 2019   | <p><u>Co-founder and Vice-President</u><br/>Co-founder of the academic startup GEIS – Geomatics Engineering Innovative Solutions Srl<br/>Via Vivarelli, 2 - 41125 Modena (Italy)<br/>Chief Research Officer: R&amp;D in the field of geomatics engineering</p>   |
| Apr. 2016 – Mar. 2018  | <p><u>Postdoctoral research fellow</u><br/>Research in the field of geospatial data processing for deformation monitoring<br/>University of Modena and Reggio Emilia, Department of Engineering ‘Enzo Ferrari’,<br/>via Vignolese, 905 - 41125 Modena (Italy)<br/>Advanced research</p>  |

- 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

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- 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 62<sup>nd</sup> 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			
B2	Independent user	C1	Proficient user	B2	Independent user	B2	Independent user	B2	Independent user
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 spatiality '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

 LinkedIn: <https://it.linkedin.com/in/cristina-castagnetti-592ba0a0>  
 Academic personal webpage: <http://personale.unimore.it/AddressBook/Home/ccastagn>
**ADDITIONAL INFORMATION**

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

Activity of reviewer

Reviewer of International Journals:

- Information Fusion in 2013,2014
- European Journal of Remote Sensing in 2013
- Sensors in 2016 and 2018
- Applied Geomatics 2017, 2019
- International Journal of Digital Earth in 2018
- Geosciences in 2018

Reviewer of Bulletin of the Italian Society of Photogrammetry and Topography

Teaching supporting activity

 Since 2008, supporting teacher for academic courses at the Engineering Faculty of the University of Modena and Reggio Emilia. Lessons for Civil and Environmental engineering degree for courses of:
 

- Geomatics for monitoring. Prof. Alessandro Capra, in English since A.Y. 2013-2014
- Topography and cartography. Prof. Alessandro Capra
- Systems and instrumentation for environmental surveys. Prof. A. Capra, prof A. Corsini
- GIS Laboratory, Prof. Alessandro Capra

Scientific Publications

**Public views:** [ORCID orcid.org/0000-0002-6591-4802](https://orcid.org/0000-0002-6591-4802)  
[Web of Science/Publons - Researcher ID N-2298-2016](https://www.webofscience.com/WebOfScience/ResearcherID/N-2298-2016)  
[Scopus ID 32367543400](https://scopus.com/authors/details/scopusid/32367543400)  
[Research gate Cristina Castagnetti](https://www.researchgate.net/profile/Cristina-Castagnetti)  
[Google Scholar Cristina Castagnetti](https://scholar.google.com/citations?user=Cristina-Castagnetti)

**h-index: Scopus=15 (490 citazioni); Google Scholar=18 (796 citazioni) – 30.06.2024.**

- Journals**
- 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-Dfinite 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)**
- 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.

- 2013 Castagnetti C., Capra A. (2013), "Recording systems. GPS satellites for archaeology: surveying around the Puruhuay Lake", in: Orsini C., Benozzi E. (Eds), *Archaeology of an Andean Pacarina: Settlement patterns and rituality around Lake Puruhuay, Ancash, Peru*. BAR INTERNATIONAL SERIES, vol. S2576, p. 9-14, Oxford: Archaeopress Publishers of British Archaeological Reports, ISBN 978-1-4073-1199-9.
- 2012 Orsini C., Benozzi E., Debandi F., Capra A., Boni E., Castagnetti C. (2012), "Con una pacarina a la vista: arquitectura como construccion de autoridad alrededor de la laguna de Puruhuay", in Lane K. J., Davila M. L. (Eds), *Arquitectura prehispanica tardia: construccion y poder en los Andes centrales*, p. 227-272, ISBN 978-612-4030-29-1.
- 2011 Bertacchini E., Castagnetti C., Capra A., Rivola R., Corsini A. (2011), "Rilievi integrati per il monitoraggio e la gestione dell'instabilità di versanti", in: Manzano A., Spalla A. (Eds), *Geomatica: le radici del futuro – Tributo a Sergio Dequal e Riccardo Galetto*, p. 89-98, ISBN 88-901939-6-4.
- 2011 Castagnetti C. (2011), "GPS-aided land-based navigation and precision farming applications: improving GPS accuracy by means of MEMS IMU and low-cost sensors", in: Villa B. (Ed), *Ricerche di Geomatica 2010 – Studi presentati alla sesta edizione del premio AUTeC*, p. 61-67, ISBN 978-88-905917-0-9.
- 2011 Castagnetti C., Bertacchini E., Capra A., Dubbini M. (2011), "Il laser scanning terrestre per l'analisi di edifici di interesse storico ed artistico", in: Manzano A., Spalla A. (Eds), *Geomatica: le radici del futuro – Tributo a Sergio Dequal e Riccardo Galetto*, p.99-108, ISBN 88-901939-6-4.
- 2010 Bertacchini E., Capra A., Castagnetti C., Dubbini M., Boni E. (2010), "Structural analysis of the Ghirlandina Tower vertical displacements", in: Cadignani R. (Ed), *The Ghirlandina Tower - History and Restoration*, vol. 02+, p. 22-26, Modena, Luca Sossella Editore, ISBN 9788889829912.
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- 2011 Bertacchini E., Capra A., Castagnetti C., Dubbini M., Rivola R., Toschi I. (2011), "Utilizzo del laser scanner per i beni culturali: analisi dell'assetto geometrico strutturale e di specifiche anomalie geometriche", in: *Proc. of ASITA National Conference, Colorno, 15-18 Nov.*, p. 315-322, ISBN 9788890313264
- 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.
- 2010 Bertacchini E., Castagnetti C., Capra A., Dubbini M., Boni E. (2010), "Monitoraggio 'near real time' di rischio frane: un GIS per la gestione dell'emergenza", in: *Proc. of ASITA National Conference, Brescia, Nov. 9-12*, p. 251-256, ISBN 9788890313257.
- 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, geophysic 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 CRICT-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, DIEF - 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 CRICT-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 Massacciucoli 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. Responsibilities: 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. Participation 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: Participation 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. Participation 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.

### Collaborations in surveys and technical projects

- 3D terrestrial laser scanner survey of the Ghirlandina Tower (Modena - IT); thermographic inspection of the facades.
- High resolution 3D terrestrial laser scanner survey of sculptures of Ghirlandina Tower (Modena - IT).
- Analysis of the subsidence effects in the historical centre of Modena (IT) with high precision leveling.
- Analysis of the subsidence effects in the historical centre of Carpi (Modena -IT) with high precision leveling.
- 3D terrestrial laser scanner survey of the Modena Cathedral (Unesco site) and structural monitoring for displacement and deformation identification.
- 3D terrestrial laser scanner survey of the Asinelli Tower (Bologna - IT) focused on structural analysis and overhang estimation.
- 3D terrestrial laser scanner and topographic surveys of the Complesso Ex Caserma San Mamolo (Bologna -IT).
- GNSS, laser scanning and photogrammetry applied to archaeology: roman site of Burnum, Croatia.
- Development of a WEBGIS about traffic and car crashes in the Province of Modena.
- Data processing and network adjustment of the GNSS permanent network of Puglia Region.
- Definition of the transformation parameters for reference frames in the ItalPos GNSS permanent network by Leica Geosystems.
- Digital Terrain Modelling of the Reno river basin (Bologna – IT).
- 3D terrestrial laser scanner and topographic surveys of S. Stefano (Bologna -IT).
- Member of the Scientific Committee for the definition of the 2014 operative plan for research activities about proximal sensing by remotely piloted aerial systems for civil protection purposes (Unione Terre di Castelli –Modena, IT).
- 3D terrestrial laser scanner surveys and 3D modeling of ancient *domus* (Terme Centrali, Giulio Polibio, Lucrezio Frontone, Panificio, Gladiatori Insula V) of the Pompei Archaeological Site ( 2015).

- 3D terrestrial laser scanner survey and BIM (Building Information Modeling) of the scholar buildings of Piazza Garibaldi (Mirandola, Modena -IT) for post-earthquake interventions (2014-2015).
- 3D terrestrial laser scanner survey, 3D modeling and GNSS geo-referencing of quarries in Bologna and Modena - IT (2014, 2015).
- Long range 3D terrestrial laser scanner of Pietra di Bismantova (Castelnuovo Monti, IT) (anno 2015).
- Laser scanners instrumental tests for the survey and modeling of the masonry building "Il Mauriziano", Reggio Emilia - IT (2015).
- Participation to the *Museum Reloaded* Project for the digitalization of museum finds with high resolution laser scanning and 3D photogrammetry for fruition and enhancement purposes (2014-2015).
- 3D digitalization and 3D modeling by high resolution laser scanner and photogrammetry of archaeological and cultural heritage finds belonging to the collection of Raccolte extra-europee, Museo delle Culture, Milan - IT (Mudec), Musei Civici di Reggio Emilia and South door of Florence Baptistery, for the duplicate by means of 3D printing (2014-2015).
- High resolution laser scanner surveys and 3D modeling of mechanical objects for reverse engineering and 3D printing purposes (2014-2015).
- Supporting surveys for the post-earthquake intervention in the Sigonio high school, Modena - IT, by means of laser scanner and thermos-camera (2015).

**Participation in national and international conferences/workshop/meetings**

- 2019 Poster presentations at the 64<sup>th</sup> Annual SIFET Meeting, Venezia 19-21 June 2019.
- 2018 Oral speech in the 63<sup>rd</sup> Annual SIFET Meeting, Gaeta 20-22 June 2018.
- 2018 Oral speech in the European Geosciences Union EGU General Assembly, Wien 8-13 Apr. 2018.
- 2017 Invited oral speech at Conference "La Torre di San Prospero: studi e indagini preliminari finalizzate al restauro", Reggio Emilia 22 Nov. 2017
- 2017 Poster presentations at the 62<sup>nd</sup> Annual SIFET Meeting, Ragusa 21-23 June 2017.
- 2017 Oral speech at GEORES2017, 1<sup>st</sup> International Conference on Geomatics and Restoration: Conservation of Cultural Heritage in the Digital Era, Florence 22-24 May 2017.
- 2017 Invited oral speech at Salone del Restauro - Conference "eBIM for the restoration: existing Building Information Modeling for managing interventions on the built environment", 24 March.
- 2016 Invited oral speech at Dronitaly, Modena (Italy), 30 September.
- 2016 Invited oral speech at SAIE2016 - From survey to BIM, Bologna (Italy), 20 October.
- 2016 Oral speech in the Annual SIFET Meeting, Lecce (Italy), 8-10 June.
- 2015 Oral speech at the Innovation Festival of EIT Climate KIC, Birmingham 27-30 Oct.
- 2015 Oral speech at the Computer Applications and Quantitative Methods in Archaeology (CAA) conference, Siena 30 March-3 April
- 2014 Oral speech at the SPIE Remote Sensing, Amsterdam 22-24 Sept. 2014.
- 2014 Oral speech in the Annual SIFET Meeting, Turin (Italy), 2-4 July.
- 2014 Poster at the Workshop UAV/RPASS in Italia, Piattaforme, regolamenti, applicazioni, problematiche, Modena, 20-21 Feb.
- 2013 Oral speech at 2<sup>nd</sup> Joint Int. Symposium on Deformation Monitoring, Nottingham, 9-10 Sept.
- 2013 Oral speech at Int. Workshop The role of Geomatics in Hydrogeological Risk, Padua 27-28 Feb.
- 2013 Poster at the European Geosciences Union EGU General Assembly, Wien Austria 7-12 Apr.
- 2012 Oral speech at the FIG Working Week 2012, Rome, Italy 6-10 May.
- 2012 Oral speech at the European Geosciences Union EGU General Assembly, Wien 22-27 Apr.
- 2012 Oral Speech in the Annual SIFET Meeting, Modena, 12-14 Sept.
- 2012 Participation in the XXII ISPRS Congress, Melbourne 25 Aug.-1 Sept.
- 2012 Poster at the European Geosciences Union EGU General Assembly, Wien Austria 22-27 Apr.
- 2011 Oral speech at the European Geosciences Union EGU General Assembly, Wien Austria 3-8 Apr.
- 2011 Oral speech at the FIG Working Week 2011, Marrakesh, Morocco 18-22 May.
- 2011 Oral speech in the Annual SIFET Meeting, Portonovo (AN), 22-24 June.
- 2011 Invited speech in Workshop Ingegneria per l'ambiente e il territorio, Modena 12 Oct.
- 2011 Invited speech in Workshop La Terza Dimensione in Archeologia. Bologna, 13 May
- 2010 Invited Speech in the Geitalia Annual congress, Turin 19-23 Sept.
- 2010 Oral speech at the 23<sup>rd</sup> International Technical ION Meeting, Portland US Sept. 21-24.
- 2010 Poster in the National ASITA Conference, Brescia 9-12 Nov.
- 2009 Oral speech at the EUREF Symposium, Florence Italy, 27-30 May.
- 2009 Poster in the Annual SIFET Meeting, Mantova 24-26 June.
- 2008 Oral speech in the National ASITA Conference, L'Aquila 21-24 Oct.
- 2008 Poster in the European Geosciences Union EGU General Assembly, Wien Austria 13-18 Apr.
- 2008 Poster in the National ASITA Conference, L'Aquila -24 Oct.
- 2007 Poster at the 5<sup>th</sup> Symposium on Mobile Mapping Technology, Padua Italy 28-31 May.
- 2007 Oral speech in the National ASITA Conference, Torino 6-9 Nov.
- 2007 Poster in the National ASITA Conference, Torino 6-9 Nov.

2007 Oral speech in the Annual SIFET Meeting, Arezzo 27-29 June.

2007 Participation in the 20<sup>th</sup> International Technical ION Meeting, Fort Worth US, 25-28 Sept.

### Supervision of students

1. Thesis supervisor: *Metodi e sfide nella fusione di dati multi-sensore e multi-frequenza per il monitoraggio strutturale: un'applicazione del filtro di Kalman*, A.Y. 2021/2022
2. Thesis supervisor: *Potenzialità e criticità dei sistemi GNSS ad alta frequenza: sviluppo di una metodologia di trattamento delle serie temporali finalizzata al monitoraggio strutturale*, A.Y. 2021/2022
3. Thesis supervisor: *Potenzialità del Building Information Modeling (BIM) nella progettazione antincendio*, A.Y. 2021/2022
4. Thesis co-supervisor: *Monitoraggio della torre Ghirlandina: dal rilievo al comportamento dinamico*. A.Y. 2019/2020.
5. Thesis co-supervisor: *Validazione di misure di spostamento per il monitoraggio strutturale: confronto tra i risultati ottenuti con radar interferometrico, accelerometri e modello agli elementi finiti*. A.Y. 2017/2018
6. Thesis co-supervisor: *Sviluppo di una metodologia per la modellazione BIM as-built di infrastrutture: il caso studio di un ponte in cemento armato*. A.A. 2016-2017
7. Thesis co-supervisor: *A new methodology for landslide monitoring by proximity survey: an approach based on unmanned aerial vehicles*. A.Y. 2016/2017
8. Thesis co-supervisor. *Monitoraggio dei fenomeni di subsidenza nel territorio modenese attraverso l'integrazione di metodologie terrestri e satellitari di precisione*. A.Y. 2015/2016
9. Thesis supervisor *Definizione del modello 3D delle pareti rocciose della Pietra di Bismantova e caratterizzazione delle discontinuità geo-strutturali mediante laser scanning terrestre*. A.Y. 2014-2015
10. Thesis supervisor *Valutazioni sulla qualità ottenibile nelle procedure di allineamento di scansioni laser: applicazioni al sito archeologico di Pompei*. A.Y. 2014-2015
11. Thesis supervisor. *Creazione di un Building Information Model da rilievi laser scanning: il BIM del ponte di Madonna Dell'Albero (RA) per l'individuazione del degrado strutturale*. A.Y. 2013/2014
12. Thesis supervisor *Potenzialità dei mezzi UAV (Unmanned Aerial Vehicles) nell'ambito della geomatica ed esempi di applicazioni nel campo del monitoraggio e disaster management*. A.Y. 2012-2013
13. Thesis co-supervisor. *Fattori critici nell'elaborazione ed interpretazione del segnale GNSS ad alta frequenza nel monitoraggio strutturale: analisi dell'accuratezza con riferimento ai parametri ambientali e alle condizioni al contorno*. A. Y. 2012/2013
14. Thesis co-supervisor. *Potenzialità del monitoraggio strutturale mediante GPS ad alta frequenza: sviluppo di una procedura di trattamento e analisi di serie temporali GPS e confronto con accelerogrammi* A.Y. 2011/2012
15. Thesis co-supervisor. *Sistemi integrati per il monitoraggio di strutture*. A. Y. 2010/2011.
16. Thesis co-supervisor. *Procedure di certificazione per strumentazione GNSS e laser scanner: applicazione delle normative ISO 17123*. A. Y. 2010/2011.
17. Thesis co-supervisor. *Il GPS per le determinazioni altimetriche: test sulle correzioni RTK di rete e sulla determinazione dell'ondulazione geoidica*. A. Y. 2010/2011
18. Thesis co-supervisor. *Il sistema satellitare GPS per il monitoraggio frane: caso applicativo alla frana di Collagna (RE)*. A. y. 2009/2010.
19. Thesis co-supervisor. *Tecniche di rilievo laser scanner per lo studio dei beni culturali Applicazione alla "Torre della Sagra" a Carpi (MO)*. A. A. 2007/2008.
20. Thesis co-supervisor. *Il controllo dei movimenti verticali nella zona monumentale della città di Modena inquadrati nel fenomeno della subsidenza nella regione Emilia Romagna*. A.A. 2007/2008.
21. Thesis co-supervisor. *Reti GNSS: Servizi di posizionamento e sistema di riferimento geodetico*. A.Y. 2006-2007.

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