

GAMBA PAOLO ETTORE

CURRICULUM VITAE

General Information

Place & Date of Birth: Cremona, April 5th, 1965
Home address: via dei Fornaciai, 7, 26100 Cremona, Italy.
Status: married with Maria Cristina Galimberti,
one daughter: Maria Elisabetta (born on March 8th, 1996)

Current situation: Full Professor, University of Pavia

Professional address: Telecommunications & Remote Sensing Laboratory
Department of Electrical, Biomedical and Computer Engineering
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Education

<i>Time</i>	<i>Degree</i>	<i>School</i>	<i>Score</i>
Nov. 1989 – Oct. 1992	Ph.D. in “Electronics, Computer Science and Electrical Engineering” <i>Dissertation title: Wideband analysis of quasi- planar waveguide at microwave and millimeter- wave frequencies</i>	University of Pavia	<i>Approved</i>
January 1989	Laurea in Electronic Engineering <i>Thesis title: 3D Electromagnetic analysis of planar circuits with the method of “subdivision into cylindrical zones”</i>	University of Pavia	110/110 “cum laude”
July 1983	Maturità Classica	Liceo Classico "D.Manin", Cremona	60/60

Research Interests

- a) Development of novel tools to extract quantitative parameters from remotely sensed data:
 - classification, mapping and geospatial data fusion procedures for the retrieval of parameters and information layers;
 - signal and image processing in high dimensional spaces, with applications in very high (spatial and/or spectral) resolution remote sensing.
- b) Design of data fusion techniques to exploit information coming from multiple EO and in situ data sources at local, regional and global scales:
 - feature extraction, selection and combination procedures to evaluate spectral, spatial and temporal characteristics of each available data source for their comparison (e.g. change detection) or synergetic use (e.g. multivariate regression);
 - fusion of features by means of algorithms able to reconcile multiple features from both homogeneous and heterogeneous data sources (e.g. 2D/3D, vector and raster, ...) and/or different scales via inference or aggregation schemes.
- c) Analysis of EO data to monitor fundamental processes in urban areas (such as soil sealing for runoff models, land use maps for radiation transfer models, exposure for risk models).

Professional Experience

<i>Time</i>	<i>Position</i>	<i>Employer</i>
To date since Jan. 1 st , 2016	Full Professor in <i>Telecommunications and Remote Sensing</i>	University of Pavia
Jan. 1 st , 2012 – Dec. 31 st , 2019	Adjunct Professor of the <i>International Institute of Earth System Science</i>	Nanjing University (P.R. China)
July 8 th , 2016 – July 7 th , 2019	Adjunct Professor	Hunan University (P.R. China)
Oct. 23 rd , 2017 – Nov. 26 th , 2017	Professor Visitante	Federal University of Alagoas (Brazil)
Oct. 1 st , 2001 – Dec. 30 th , 2015	Associate Professor in <i>Telecommunications and Remote Sensing</i>	University of Pavia
Sept. 25 th , 2014 – Jan. 5 th , 2015	Professor Visitante do Exterior	Pontifical Catholic University of Rio de Janeiro (Brazil)
Nov. 1 st , 2009 – Feb. 29 th , 2012	Deputy Head of the Department of Electronics	University of Pavia
Dec. 1 st , 2000 – Sept. 30 th , 2001	Confirmed Assistant Professor <i>Telecommunications and Remote Sensing</i>	University of Pavia
Dec. 1 st , 1997 – Nov. 30 th , 2000	Confirmed Assistant Professor <i>Electromagnetics</i>	University of Pavia
Dec. 1 st , 1994 – Dec 18 th , 1997	Assistant Professor <i>Electromagnetics</i>	University of Pavia
Jan. 1992 – Nov. 30 th , 1994	Senior Researcher <i>Microwave circuit design and test</i>	Siemens TLC (Milan, Italy)

Supervision of MSc, PhD and Post Doc students

a) M.Sc. Thesis evaluation (>50)

- Member of Graduate and Undergraduate Evaluation Committee for several times each year;
- Supervisor of more than 50 theses since March 1998.

b) Ph.D. students: (12: 11 defended, 1 on-going)

- Member of the Governing Board of the Ph.D. in Electrical Engineering, Electronics and Computer Science since 2008.

<i>Candidate</i>	<i>Dates</i>	<i>Funded by</i>	<i>Theme</i>
Gianni Lisini	2003-2006	Italian Ministry for Education and Research	Quick and effective algorithms to extract and combine linear features from remotely sensed data and provide a consistent interpretation approach useful for mapping, change detection and, generally, speaking, scene interpretation
Giovanna Trianni	2005-2008	Italian Ministry for Education and Research	Efficient techniques for spatial processing of Synthetic Aperture Radar (SAR) data for the characterization of urban environments, change detection in case of earthquakes and other disasters
Mattia Stasolla	2005-2008	Italian Ministry for Education and Research	Human settlement characterization using EO data at different resolutions and wavelengths, implementing effective data fusion procedures in case both optical and radar data are available
Emanuele Goldoni	2007-2010	Banca Agricola Mantovana	Design of real-time protocols for wireless sensor networks, specifically useful for structural health monitoring and environmental parameter retrieval
Massimiliano Aldrighi	2008-2011	Italian Space Agency	Methodologies to improve land use mapping using medium resolution EO data, especially in the microwave region, using spatial information and data fusion with optical data at multiple scales
Karoly Bakos	2008-2011	HYPER-I-NET FP6 project	Techniques for vegetation mapping using hyperspectral data by means of effective and novel feature extraction, feature selection and classification algorithms
Alberto Savioli	2009-2012	Italian Ministry for Education and Research	Implementation of effective algorithms for localization in wireless sensor networks (WSN) and the design of innovative data fusion techniques to exploit WSN and cinematic measurements
Sanaz Kianoush	2010-2013	Cariplo Foundation	Fusion of information by different sources for WSN indoor localization of moving targets
Andreas Salentinig	2013-2016	ESA	Human settlement characterization at the global scale by fusing SAR and multispectral data sets at multiple spatial resolutions
Meiqin Che	2016-2019	China Scholarship Council	2D/3D urban change detection
Oladimeji Mudele	2017-2020	Research Funds	Big EO data for health exposure mapping
David Marzi	2019-2022	Research Funds	Global mapping using multitemporal and multisource SAR data

c) Post-docs

<i>Candidate</i>	<i>Dates</i>	<i>Funded by</i>	<i>Theme</i>
Gianni Lisini	2010-2012	Center for Research on Risk and Security, Institute for Advanced Studies, Pavia	Design and implementation of a quasi-real time system for rapid mapping in case of disasters using SAR and optical VHR data
Emanuele Goldoni	2011-2013	University Foundation of Mantua	Development of real-time protocols for wireless sensor networks in challenging environments
Andrea Marinoni	2011-2013	Regione Lombardia and STMicroelectronics	DSP for fast and dispersive channels
	2013-2017	ASI USHIER & FP7 MARSITE projects	Hyperspectral & EO Big Data processing
	2017-2018	PULSE project	Thermal data processing
Gianni Cristian Iannelli	2014-2017	PRIN project	Multi-scale classification and data fusion in VHR optical images
Tonia Sorriso	2019-2021	ESA CCI+ project	Global land cover mapping using SAR
	2021-	ASI MultiBigSARData	Multi-temporal and multi-scale SAR pre-processing for mapping purposes

Evaluation Committees

a) National Search and Evaluation Committees

- Member of the Search Committee for a position of Assistant Professor in ICT at the Univ. of **Pisa**, 2001.
- Member of the Evaluation Committee for Ph.D. candidates in ICT, Univ. of **Bologna**, 2002.
- Member of the Evaluation Committee for Ph.D. candidates in Remote Sensing, Univ. of **Trento**, 2001, 2007, 2011, 2012.
- Member of the Selection Committee for candidates to the Ph.D. in Electrical Engineering, Electronics and Computer Science, **Pavia**, 2006, 2007 and 2011.
- Member of the Evaluation Committee for Ph.D. candidates in Electronic Engineering, Univ. of **Rome “Tor Vergata”**, 2001 and 2007.
- Member of the Search Committee for a position of Research Assistant (Ricercatore a Tempo Determinato A) in ICT at the Univ. of **Trento**, 2013.
- Member of the Evaluation Committee for a Ph.D. candidate in Remote Sensing, Univ. of **Genoa**, 2016.
- External evaluator for a Ph.D. candidate in Remote Sensing, Univ. of **Naples “Parthenope”**, 2017.

- External evaluator for a Ph.D. candidate in Telecommunications Engineering, Univ. of **Bologna**, 2017.
- Member of the Search Committee for a position of Full Professor in Telecommunications at the Univ. of **Catania**, 2018.
- Member of the Search Committee for a position of Research Assistant (Ricercatore a Tempo Determinato B) in Telecommunications at the Univ. of **Trento**, 2019.
- Member of the Search Committee for a position of Associate Professor in Telecommunications at the Univ. of **Naples “Parthenope”**, 2019.
- Member of the Search Committee for a position of Research Assistant (Ricercatore a Tempo Determinato A) in Telecommunications at the Univ. of **Naples “Parthenope”**, 2020.
- Member of the Search Committee for a position of Full Professor in Telecommunications at the Univ. of **Rome “Sapienza”**, 2020.
- Member of the Search Committee for a position of Research Assistant (Ricercatore a Tempo Determinato B) in Telecommunications at the Univ. of **Cagliari**, 2020.

b) International Search and Evaluation Committees

- External Evaluator in the Evaluation Committee for Ph.D. in Remote Sensing at **Nanyang Technological University (Singapore)** by Dr. Vladimir Buntilov, Oct. 2007.
- External Evaluator in the Evaluation Committee for Ph.D. in Remote Sensing at **INPE (Brazilian National Space Research Institute, Brazil)** by Dr. Livia Tomas, April 2010.
- Opponent in the Evaluation Committee for Ph.D. in Hyperspectral Remote Sensing at the **Grenoble Institute of Technology** (France) and the **University of Iceland** by Dr. Yuliya Tarabalka, June 2010 (joint PhD degree, with a European label).
- Opponent in the Evaluation Committee for Ph.D. in Remote Sensing at **INRIA** (Sophia Antipolis, France) by Dr. Aurelie Voisin, Oct. 2012.
- External Evaluator in the Evaluation Committee for Ph.D. in Computer Science at **University of Extremadura** (Spain) by Dr. Gabriel Martín Hernández, Jan. 2014.
- External Evaluator in the Evaluation Committee for Ph.D. in Computer Science at **University of Extremadura** (Spain) by Dr. Inmaculada Garcia Dopido, Jan. 2014.
- External Expert on the suitability of Dr. Tiit Kutser's application for the Lead Researcher position in the Estonian Marine Institute, **University of Tartu** (Estonia), Oct. 2014.
- External Expert on the evaluation of Dr. B. Uma Shankar for promotion to the position of Associate Professor, **Indian Statistical Institute, Kolkata** (India), Jan. 2015.
- Opponent in the Evaluation Committee for Ph.D. in Remote Sensing at **University of Grenoble Alpes** (France) by Dr. Guillaume Tochon, Dec. 2015.
- External Expert on the evaluation of Dr. F. Bovolo for tenure track to Senior Researcher position, **Fondazione Bruno Kessler, Trento** (Italy), Feb. 2016.
- External Expert on the evaluation of Dr. Norman Kerle for tenure track to Associate Professor position, **University of Twente** (The Netherlands), March 2016.
- Opponent in the Evaluation Committee for Ph.D. in Remote Sensing at **University of Grenoble Alpes** (France) by Dr. Lucas Drumetz, Oct. 2016.
- President of the Evaluation Committee for Ph.D. in Remote Sensing at **University of Grenoble Alpes** (France) by Dr. Laetitia Loncan, Oct. 2016.
- External Reviewer for the PhD thesis of Brajesh Kumar, **IIT Kampur** (India), Oct. 2016.
- External Expert on the evaluation of Dr. Haikel S. Hichri for promotion to the position of Associate Professor, **King Saud University** (Saudi Arabia), Dec. 2016.

- External Reviewer for the PhD thesis of Ramachandra Murthy, **Indian Statistical Institute, Kolkata** (India), Jan. 2017.
- External Reviewer for the PhD thesis of Anand Mehta, **IIT Kampur** (India), Apr. 2017.
- External Reviewer for the PhD thesis of Meng Xu, **University of New South Wales** (Australia), May 2017.
- Committee member for the Master thesis of Pamela Flores, **Universidad de Cordoba** (Argentina), Nov. 2017.
- Committee member for the Master thesis of Ana Maria Aquino, **Universidade Federal de Alagoas** (Brazil), Nov. 2017.
- External Expert on the evaluation of Dr. Xiuping Jia for promotion to the position of Senior Lecturer, **University of New South Wales** (Australia), May 2018.
- External Expert on the evaluation of Dr. Iphigenia Keramitsoglou for promotion to the position of Research Director, **National Observatory of Athens** (Greece), Aug. 2018.
- External expert for the nomination of Dr. Animesh Maitra to **West Bengal Academy of Science & Technology** (WAST) fellowship, India, Sept. 2018.
- Opponent in the Evaluation Committee for Ph.D. in Remote Sensing at **ONERA** (Toulouse, France) by Dr. Josselin Aval, Oct. 2018.
- Opponent in the Evaluation Committee for Ph.D. in Remote Sensing at **University of Toulouse** (France) by Dr. Vinicius Ferraris, Oct. 2018.
- External Expert on the Search and Selection Committee for a Full Professor position at **Technical University Berlin** (Germany), June 2020.
- External Expert on the Search and Selection Committee for a Tenure Track Assistant Professor position at **Technical University Munich** (Germany), July 2020.
- Opponent in the Evaluation Committee for Ph.D. in Remote Sensing at **University of Wageningen** (The Netherlands) by Dr. Shivangi Srivastava, Jan. 2020.
- Opponent in the Evaluation Committee for Ph.D. in Remote Sensing at **University of Twente** (The Netherlands) by Dr. Diogo Duarte, Jan. 2020.
- External Reviewer for the PhD thesis of Chunping Qiu, **Technical University Munich** (Germany), Aug. 2020.
- External Reviewer for the PhD thesis of Mutum Bidyarani Devi, **Hindustan IIT** (India), Dec. 2020.
- External Expert on the evaluation of Dr. Avik Bhattacharrya for promotion to the position of Full Professor, **IIT Mumbai** (India), March 2021.
- External Reviewer for the PhD thesis of Yinyi Lin, **Chinese University of Hong Kong** (Hong Kong), July 2021.
- External Reviewer for the PhD thesis of Yao Sun, **Technical University Munich** (Germany), Sept. 2021.

c) International Projects Evaluation Committees

- External reviewer for applications to the calls of the following foreign research organizations:
 - Belgium: **Belgian Science Policy Office** (2010, 2011, 2013)
 - Canada: **Natural Sciences and Engineering Research Council of Canada** (2016, 2018)
 - Cyprus: **Cyprus Research Promotion Foundation** (2012)
 - Germany: **Helmholtz Association** (2012, 2018, 2019)

- Hong Kong: **Chinese University of Hong-Kong** (2016)
 - Israel: **Ministry for Science and Technology** (2021)
 - Kazakhstan: **National Center of Science and Technology Evaluation** (2011, 2012, 2013, 2014, 2016, 2017, 2019, 2020)
 - The Netherlands: **Netherlands Organization for Scientific Research** (2012, 2018), **Fonds Wetenschappelijk Onderzoek - Vlaanderen, FWO** (2016)
 - Sweden: **Swedish National Space Board** (2007)
 - Switzerland: **Swiss National Science Foundation** (2009, 2011, 2014, 2015, 2016, 2018, 2019, 2020, 2021), **ETH Zurich Research Commission** (2013)
 - United Kingdom: **Royal Society** (2008), **Natural Environment Research Council** (2010)
- Member of the External Review Panel for the whole project duration:
 - Modelling and forecasting African Urban Population Patterns for vulnerability and health assessments - MAUPP (2016-2020), funded by the **Belgian Science Policy Office**.

d) National Projects Evaluation Committees

- External reviewer for applications to the calls of the following national research organizations:
 - Provincia Autonoma di Trento: **Call 1 – post-doc - incoming** (2010)
 - Ministero dell’Istruzione, Università e Ricerca: **Bando “Futuro in Ricerca”** (2013)

Publications

The complete list of publications is provided in a separate file. However, for the reader's convenience, we provide here a quantitative summary.

SUMMARY	
Books	2
Chapters in books	22
Papers in books	16
Special Issues edited in int. journals	18
Papers in international peer-reviewed journals	179
Papers in national peer-reviewed journals	5
International conference papers	317
National conference papers	8

Moreover, citations indexes are also provided, as computed using either the ResearcherID by Thompson Reuters or the Scopus databases (values valid as of Dec. 10, 2021).

BIBLIOMETRY		
	ResearcherID	Scopus
Number of cited papers	234	439
Total number of citations	5.656	8163
H-index	38	44

Editorial activities

a) Editorial Board membership

a.1) Current

- **Editorial Advisory Board**, ISPRS Journal of Photogrammetry and Remote Sensing (since Jan. 2013)
- **Associate Editor**, Remote Sensing of Environment (since May 2021)

a.2) Past

- **Editor-in-Chief**, IEEE Geoscience and Remote Sensing Letters (2009-2013)
- **Associate Editor**, IEEE Trans. on Geoscience and Remote Sensing (2009-2013)
- **Associate Editor**, IEEE Geoscience and Remote Sensing Letters (2006-2014)
- **Associate Editor**, International Journal of Information Fusion (2006-2009)
- **Editorial Board**, International Journal of Image and Data Fusion (2013-2015)

b) Guest Editor of Special Issues in Peer-Reviewed Journals (18 special issues since 2003)

- **ISPRS Journal of Photogrammetry and Remote Sensing**, Theme Issue on “Algorithms and Techniques for Multi-Source Data Fusion in Urban Areas”, P. Gamba, O. Hellwich, P. Lombardo, Eds., Vol. 58, n.1-2, May 2003.
- **IEEE Transactions on Geoscience and Remote Sensing**, Special Section on “Urban Remote Sensing”, P. Gamba, J.A. Benediktsson, G.C. Wilkinson, Eds., Vol. 41, n. 9, Sept. 2003.
- **International Journal of Information Fusion**, Special Issue on “Fusion of Urban Remotely Sensed Features”, P. Gamba, O. Hellwich, P. Lombardo, Eds, Sept. 2005.
- **Pattern Recognition Letters**, Special Issue on “Pattern Recognition in Remote Sensing”, P. Gamba and D. Clausi, Eds., Vol. 27, n. 4, Mar. 2006.
- **IEEE Transactions on Geoscience and Remote Sensing**, Special Issue on “Remote Sensing and Disaster Management”, P. Gamba, J. Smith, M. Crawford, K.-S. Chen, Eds., vol. 45, n.6, June 2007.
- **Rivista Italiana di Telerilevamento**, Special Issue on “Urban Remote Sensing”, P. Gamba, Ed., Vol. 38, June 2007.
- **IEEE Transactions on Geoscience and Remote Sensing**, Special Issue on “Data Fusion”, P. Gamba and J. Chanussot, Eds., Vol. 46, n. 5, May 2008.
- **IEEE Journal on Selected Topics in Applied Earth Observation and Remote Sensing**, Special Issue on “Remote Sensing of Human Settlements: Status and Challenges”, P. Gamba, F. Tupin and Q. Weng, Eds., Vol. 1, n. 2, June 2008.
- **IEEE Journal of Selected Topics in Applied Earth Observation and Remote Sensing**, Special Issue on “Remote Sensing of Regional Land Use and Land Cover”, Q. Weng, J. Zhang, P. Gamba, G. Xian, Eds., vol. 2, no. 2, June 2009.
- **IEEE Journal on Selected Topics in Applied Earth Observation and Remote Sensing**, Special Issue on “Human settlements: a global remote sensing challenge”, P. Gamba, P. Du, C. Juergens and D. Carsten, Eds., Vol. 4, March 2011.

- **IEEE Transactions on Geoscience and Remote Sensing**, Special Issue after IGARSS'10, P. Gamba, D. Kunkee, P. Smits and K. StGermain, Eds., Vol. 49, n. 12, Dec. 2011.
- **IEEE Journal of Selected Topics in Applied Earth Observation and Remote Sensing**, Special Issue on “Human settlement monitoring using multiple EO data”, P. Gamba, U. Stilla, C. Juergens, D. Maktav, Eds., Vol. 5, no. 4, Aug. 2012.
- **IEEE Journal of Selected Topics in Applied Earth Observation and Remote Sensing**, Special Issue on “EO approaches for large area land monitoring with multiple sensors and resolutions”, M. Herold, S. Prasad, P. Gamba, Eds., vol. 6., no. 5, Oct. 2013.
- **IEEE Journal of Selected Topics in Applied Earth Observation and Remote Sensing**, Special Issue on “Human settlement observation and monitoring from Space”, P. Gamba, C. Almeida, C. Juergens, D. Maktav, B. Salmon, Eds., vol. 7., no. 10, Oct. 2014.
- **Journal of Applied Remote Sensing**, Special Section on “Airborne hyperspectral remote sensing of urban environments”, J. Du, and P. Gamba, Eds., vol. 8, no. 11, Oct. 2014.
- **IEEE Journal of Selected Topics in Applied Earth Observation and Remote Sensing**, Special Issue on “Urban Remote Sensing”, D. Tuia, P. Gamba, C. Juergens, D. Maktav, Eds., vol. 9, no. 5, May 2016.
- **IEEE Journal of Selected Topics in Applied Earth Observation and Remote Sensing**, Special Issue on “IGARSS 2015”, S.B. Serpico, V. Pascazio, L. Bruzzone, P. Gamba, Eds., vol. 9, no. 6, June 2016.
- **Journal of Applied Remote Sensing**, Special Section on “Sparsity driven high dimensional remote sensing image processing and analysis”, X. Huang, B. Huang, and P. Gamba, Eds., Dec. 2016.
- **IEEE Journal of Selected Topics in Applied Earth Observation and Remote Sensing**, Special Issue on “IGARSS 2020”, A. Camps, W.J. Emery, P. Gamba, J. Judge, J.-C- Shi, Eds., *in press*, 2021.

c) *Reviewer*

- IEEE Trans. on Geoscience and Remote Sensing
- IEEE Geoscience and Remote Sensing Letters
- IEEE Journal on Selected Topics in Applications of Remote Sensing
- IEEE Journal on Selected Topics in Signal Processing
- IEEE Transactions on Instrumentation & Measurement
- IEEE Transactions on Image Processing
- Proceedings of IEEE
- International Journal of Remote Sensing
- Remote Sensing Letters
- Remote Sensing of the Environment
- ISPRS Journal of Photogrammetry and Remote Sensing
- Photogrammetry Engineering & Remote Sensing
- Photogrammetric Record
- International Journal of Applied Earth Observation and Geoinformation
- International Journal of Geographical Information Science
- Remote Sensing
- International Journal of Digital Earth
- Journal of Applied Remote Sensing
- Journal of Applied Geography
- European Journal of Remote Sensing
- Egyptian Journal of Remote Sensing
- Geocarto International

- Acta Astronautica
- Advances in Space Research
- GIScience and Remote Sensing
- Earthquake Spectra
- International Journal of Image and Data Fusion
- International Journal of Information Fusion
- IEE Proc. on Radar, Sonar and Navigation
- Scientific Reports
- IEEE Communications Letters
- IET Computer Vision
- Image and Vision Computing
- Applied Optics
- Pattern Recognition
- Pattern Recognition Letters
- Signal Processing
- Signal Processing: Image Communication
- Information Sciences
- Mathematical Problems in Engineering
- Engineering Applications of Artificial Intelligence
- Sensors
- Development Engineering
- Environmental Research Letters
- Nature: Scientific Reports
- Journal of Hydrology
- Applied Ecology and Environmental Research
- Scientia Iranica
- Journal of Urban Planning and Development
- PLOS one
- Nature Sustainability

Professional membership

- Fellow of **IEEE** (Institute of Electrical and Electronic Engineers)
- Fellow of **IAPR** (International Association for Pattern Recognition)
- Member of **AIT** (Associazione Italiana Telerilevamento)
- Member of Albo dell' **Ordine degli Ingegneri**, Cremona.

Leadership roles in Scientific Societies & Research Institutes

- **IEEE Geoscience and Remote Sensing Society**
 - **Chair** of the **Data Fusion Technical Committee** (2005-2009)
 - **Chair** of the **Conference Advisory Committee** (2008-2009)
 - **“Ex officio” Administrative Committee Member** (2009-2013)
 - **Elected Administrative Committee Member** (2014-2020)
 - **Responsible** for the activities towards Latin America (2014-2016)
 - **Chapter Committee Chair** (2014-2016)
 - **VP for Professional Activities** (2016)
 - **Executive VP** (2017-2018)

- **President** (2019-2020)
- **Past President and Nominations Committee Chair** (2021-2022)
- **International Association for Pattern Recognition**
 - **Chair of Technical Committee 7 “Remote Sensing”** from 2002 to 2004.
- **UN-HABITAT**
 - **Member of the International Advisory Board** for the “**Status of World Cities Report**” for 2008.
- **European Center for Training and research in Earthquake Engineering**
 - **Head of the Remote Sensing and Telecommunications Section** from 2008 to March 2011.
- **IUSS (University Institute for Advanced Studies)**
 - **Director of the International Center for Research on Risk and Security** from 2007 to December 2010.
- **Consorzio Universitario Italo-Argentino (CUIA)**
 - Member of the Scientific Committee on behalf of the University of Pavia since March 2016, and the Administrative Committee since January 2018.
- **Sub-Center of International Cooperation and Research on Lunar and Planetary Exploration of COSE (P.R. China)**
 - Member of the Academic Scientific Committee since September 2018.

Workshops & Conferences, special sessions

a) Chair of Major International Conferences

- **Finance Chair** of the 2008 IEEE Radar Conference, Rome (Italy), May 2008.
- **Technical Co-Chair** of the 2010 IEEE Geoscience and Remote Sensing Symposium (IGARSS’10), Honolulu (USA), July 2010.
- **Technical Co-Chair** of the 2015 IEEE Geoscience and Remote Sensing Symposium (IGARSS’15), Milano (Italy), July 2015.
- **Technical Co-Chair** of the 2020 IEEE Geoscience and Remote Sensing Symposium (IGARSS’20), *on-line*, July 2020.

b) Chair of International Workshops

- **Founder and Technical Chair** of the IEEE GRSS/ISPRS Joint Workshop on “Data Fusion and Remote Sensing over Urban Areas” (since 2007 renamed as “Joint Urban Remote Sensing Event” – JURSE): Rome, Italy (Nov. 2001), Berlin, Germany (May 2003), Tempe AZ, USA (May 2005), Paris, France (April 2007), Shanghai, P.R. China (May 2009), Munich, Germany (April 2011), Sao Paulo, Brazil (April 2013), Lausanne, Switzerland (April 2015).
- 2nd Workshop on “Pattern Recognition in Remote Sensing (PRRS’04), Kingston upon Thames, UK, August 27, 2004, **Technical Chair**.
- ASITA e SIFET Workshop on “Urban Remote Sensing”, Mantua, Italy, December 1, 2005, **Chair**.
- 6th Workshop on “Remote Sensing for Disaster management Applications”, September 2008, Pavia, **Technical Chair**.

- Workshop on “The use of VHR remote sensing sensors for Disaster Management”, Joint Research Centre of the European Commission, Ispra, Italy, November 2009, **Technical Chair**.
- 2nd International Workshop on “Earth Observation and Remote Sensing Applications” (EORSA 2012), Shanghai, P.R. China, June 2012, **Technical Co-Chair**.
- 3rd International Workshop on “Earth Observation and Remote Sensing Applications” (EORSA 2014), Changsha, P.R. China, June 2014, **Technical Co-Chair**.
- 4th International Workshop on “Earth Observation and Remote Sensing Applications” (EORSA 2016), Guangzhou, P.R. China, July 2016, **Technical Co-Chair**.
- 5th International Workshop on “Earth Observation and Remote Sensing Applications” (EORSA 2018), Xi’an, P.R. China, June 2018, **Technical Co-Chair**.
- 2nd Italian Radar and Remote Sensing Workshop, Pavia, Italy, May 27-29, 2018, **Conference Chair**.

c) Organizer and Chair of International Summer/Winter Schools

- 3rd Summer School of the HYPERINET project, Pavia, September 2009, **Co-organizer and Chair**.
- 2nd UNIPV Aerospace Summer School on “Data Fusion and Target Detection from Airborne and Spaceborne Data, Pavia, September 2012, **Co-organizer and Chair**.

d) Theme area coordinator for Major International Conferences

- 2004 IEEE Geoscience and Remote Sensing Symposium (IGARSS’04), Anchorage, Sept, 2004, **Theme Area coordinator for “Remote Sensing Applications”**;
- 2005 IEEE Geoscience and Remote Sensing Symposium (IGARSS’05), Seoul (Korea), July 2005, **Theme Area coordinator for “Remote Sensing Applications”**;
- 2006 IEEE Geoscience and Remote Sensing Symposium (IGARSS’06), Denver (CO), July 2006, **Theme Area coordinator for “Remote Sensing Applications”**;
- 2007 IEEE Geoscience and Remote Sensing Symposium (IGARSS’07), Barcelona (Spain), July 2007, **Theme Area coordinator for “Remote Sensing Applications”**.

e) Organizer and Chair of Special Sessions

- “Urban remote sensing”, Tyrrhenian International Workshop on Remote Sensing 2003 (TIWRS03), Elba Island (Italy), Sept. 2003, Co-Chair;
- “Data Fusion”, **IGARSS’05**, Seoul (Korea), July 2005, Co-Chair;
- “Urban Remote Sensing”, **2005 URSI (Union of Radio Science) General Assembly**, New Delhi (India), Oct. 2005, Chair;
- “Data Fusion I” and “Data Fusion II”, **IGARSS’06**, Denver (CO), July 2006, Chair;
- “Data Fusion I” and “Data Fusion II”, **IGARSS’07**, Barcelona (Spain), July 2007, Chair.
- “Data Fusion” and “Urban remote sensing”, **IGARSS’08**, Boston (MA), July 2008, Chair.
- “Remote Sensing of Human Settlements”, **IGARSS’10**, Honolulu (Hawaii), July 2010, Chair.
- “State of the art of urban remote sensing”, **IGARSS’12**, Munich (Germany), July 2012, Chair.
- “Urban remote sensing”, **IGARSS’14**, Quebec City (Canada), July 2014, Chair.
- “Urban remote sensing”, **IGARSS’16**, Beijing (P.R. China), July 2016, Chair.
- “Essential Urban Variables from Satellite Observations”, **IGARSS’18**, Valencia (Spain), July 2018, Chair.

f) Chair of Regular Sessions

Chair or Co-Chair of numerous other **regular** sessions at various international conferences.

Awards and honors

a) Awards

- Grant awarded by Siemens TLC (Milan, Italy), for **excellence of the Laurea thesis**.
- **“Best paper in GIS” 1998 award by ASPRS**, for the paper P. Gamba, F. Casciati: “GIS and image understanding for near real-time earthquake damage assessment”, *Photogrammetric Engineering and Remote Sensing*, Vol. 64, n. 10, pp. 987-994, Oct.1998.
- **Excellence in Reviewing** for the ISPRS Journal of Photogrammetry and Remote Sensing in 2013 and 2016.
- **Excellent Reviewer (Top 10)** for the journal *Remote Sensing of the Environment* in 2018.

b) Invited lectures and courses

- **Invited lectures** on topics related to “Urban Remote Sensing”, “Data Fusion”, “SAR Data Interpretation”, “Hyperspectral Data Processing” at
 - NASA Jet Propulsion Laboratory, California Institute of Technology (Caltech), Nov. 1998 and 1999;
 - University of Utah, Salt Lake City (UT), USA, Feb. 2002;
 - Technical University of Berlin, Berlin, Germany, Dec. 2003;
 - University of Trento, Trento, Italy, Jan. 2007;
 - Joint Research Center of the European Union, Ispra, Italy, Feb. 2007;
 - China Earthquake Administration, Beijing, China, October 2009 and May 2010;
 - China University of Mining and Technology, Xuzhou, China, October 2009;
 - INPE (Brazilian National Institute for Space Research), Sao Jose dos Campos, Brazil, April 2010;
 - Nanjing University, Nanjing, China, June 2011, June 2012, May 2014, Nov. 2015, Sept. 2018;
 - USGS, Golden (Co), April 2012;
 - Chinese University of Hong Kong and Polytechnic University of Hong Kong, Hong Kong, December 2012;
 - Geoscience Australia, Canberra, Australia, July 2013;
 - University of Massachusetts at Amherst, Nov. 2013;
 - Northwestern Polytechnical University, Xi’an, P.R. China, May 2014;
 - Tonji University, Shanghai, P.R. China, Sept. 2014;
 - Wuhan University, Wuhan, P.R. China, Oct. 2015;
 - Institute of Remote Sensing & Digital Earth, Chinese Academy of Sciences, Beijing, P.R. China, Oct. 2015;
 - China University of Geosciences in Beijing, P.R. China, Oct. 2015;
 - Satellite Mapping and Applications Center, Beijing, P.R. China, Nov. 2015;
 - Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences, Urumqi, P.R. China, July 2016.
 - Universidade Federal do Parana, October 2017.
 - Ben Gurion University of the Negev, December 2017.
- **Short course** on “Urban remote sensing and data fusion”, University of Extremadura, Spain, April 3-5, 2013, funded by ERASMUS Lifelong Training Programme.

- **Short course** on “Urban remote sensing and data fusion”, University of Cordoba, Argentina, Sept. 23-26, 2016, funded by ERASMUS+.
- **Short course** on “Urban remote sensing and data fusion”, Ben Gurion University of the Negev, Israel, Jan. 13-17, 2020, funded by ERASMUS+.

c) Keynote, Invited and Plenary Speeches

- **Invited presentation** on “Building extraction from LIDAR and InSAR data” at the “Feature Extraction Workshop”, Loughborough (UK), October 2002.
- **Keynote speech** on “Image processing in remote sensing data: state of the art” at the “East-West Vision Workshop”, Graz (Austria), Sept. 2002.
- **Plenary speech** on “Data fusion in urban remote sensing” at the 30th Asian Conference on Remote Sensing, Beijing, China, October 2009.
- **Keynote speech** on “Material and object mapping using multispectral and hyperspectral data in urban areas” at 1st International Conference on Sustainable Urbanization, Hong Kong, December 2010.
- **Invited speech** on “InSAR and LIDAR applications and data fusion” at the 2011 Brazilian Symposium on Remote Sensing, Curitiba (Brazil), May 2011.
- **Plenary speech** on “Remote sensing for natural hazard monitoring” at the 2011 Geographical Information for Disaster Management Conference (GI4DM), Antalya, Turkey, May 2011.
- **Keynote speech** on “Change detection in urban areas: spatial and temporal scales” at the 1st EARSeL Workshop on Temporal Analysis of Satellite Images, Mykonos, Greece, May 2012.
- **Plenary speech** on “Human settlements: a global challenge for EO data processing and interpretation” at the Second International Workshop on Earth Observation and Remote Sensing Applications (EORSA) conference, Shanghai, P.R. China, June 2012.
- **Keynote speech on** “Earth observation and sensor networks, a data fusion approach” at the SmartGEO event (“The new Earth observation: the added value for Smart Cities”), Smart City World Congress, Barcelona, Spain, Nov. 2012.
- **Invited speech** on “Global monitoring of human settlements using EO data: current status and challenges” at NCU Mini-Workshop on Remote Sensing, Taipei, Republic of China, Jan. 2013.
- **Invited speech** on “Data Fusion Techniques for Remote Sensing Data Interpretation” at Jornadas de Teledeteccion Aeroespacial TELECAN, Gran Canaria, Spain, Nov. 2013.
- **Invited speech** on “Remote Sensing and the Risk Management Cycle: Where Does It Fit?” at Jornadas de Teledeteccion Aeroespacial TELECAN, Gran Canaria, Spain, Nov. 2013.
- **Invited presentation** on “Monitoring urban extents using SAR and optical data” at the Workshop on “Global Urban Observation and Monitoring from Space”, Athens, March 31 – April 1, 2014.
- **Keynote speech** on “Challenges of Global Scale Urban Mapping” at the Third International Workshop on Earth Observation and Remote Sensing Applications (EORSA 2014), Changsha, P.R. China, June 11-14, 2014.
- **Invited presentation** on “Global urban maps for the last 20 years?” at the Understanding Risk Conference, London, UK, July 2014.

- **Invited speech** on “Human Settlements Mapping: A Multi-scale Feature Fusion Problem” at the International Workshop on Multi-Sensor Data Fusion for Remote Sensing Image Analysis, Sun Yat-Sen University, Guangzhou, P.R. China, Sept. 2014.
- **Invited presentation** on “The challenges (and opportunities) to map urban areas at the national level” at the IEEE 23 Sinyal İşleme ve İletişim Uygulamaları Kurultayı during the Turkish Signal Processing Conference, Malatya, Turkey, May 2015.
- **Plenary speech** on “The hyperspectral Pavia data sets: history, challenges and future” at the CCSIA 2015 (Chinese WHISPERS), Northwestern Polytechnical University, Xi’an, P.R. China, Sept. 2015.
- **Plenary speech** on “Remotely sensed Big Data: ideas and applications” at the 2015 International Conference on Intelligent Earth Observing and Applications, Guilin University of Technology, Guilin, P.R. China, Oct. 2015.
- **Keynote speech** on “Urban Area Extraction Exploiting Multi-Resolution SAR Data Fusion” at the 4th International Workshop on Earth Observation and Remote Sensing Applications (EORSA 2016), Guangzhou, P.R. China, July 2016.
- **Plenary speech** on “Non-linear unmixing of hyperspectral data: new models, new applications” at the International Workshop on Hyperspectral Imaging and Processing, Changsha, P.R. China, July 2016.
- **Invited presentation** on “What should I write and publish?” at the 2016 Young Professional & Summer School, Presidente Prudente, Brazil, Sept. 2016.
- **Invited presentation** on “Non linear unmixing: new models, new applications” at Workshop on “Pattern Recognition in Earth Observation”, SIBGRAPI conference, Sao José dos Campos, Brazil, Oct. 2016.
- **Keynote speech** on “From urban mapping to urban monitoring using EO” at the RSIP 2017 (International Workshop on Remote Sensing with Intelligent Processing). Shanghai, P.R. China, May 2017.
- **Invited speech** on “Activities by GRSS at large: Data Fusion Contests and DASE” at the 2017 Brazilian Symposium on Remote Sensing, Santos (Brazil), May 2017.
- **Plenary speech** on “Non-linear hyperspectral unmixing via the polynomial mixing model” at the CCSIA 2017 (Chinese WHISPERS), Harbin, P.R. China, Sept. 2017.
- **Plenary speech** on “Information fusion for remote sensing” at the IV JIAAIS Interdisciplinary Workshop on Advanced Signal and Image Analysis, Maceió, Brazil, Nov. 2017.
- **Plenary speech** on “Mapping human interactions with the environments through multiple EO data” at the Seminário Conservação da Caatinga Frente às Secas, à Desertificação e às Mudanças Climáticas (I SMC3), Maceió, Brazil, Nov. 2017.
- **Invited speech** on “Urban remote sensing: from global to local and back”, Israeli Geographer Association 58 Annual meeting, Beersheba, Israel, Dec. 2017.
- **Keynote Speech** on “GRSS capacity building for Africa” at the 2018 Digital Earth Summit, El Jadida (Morocco), April 2018.
- **Plenary speech** on “Human settlement and infrastructure monitoring with hyperspectral imaging” at the EORSA 2018 conference, Xi’an (P.R. China), June 2018.
- **Plenary speech** on “Urban remote sensing and data fusion by satellite” at the IX Italian Conference of the Italian Remote Sensing Association, Florence (Italy), July 2018.
- **Invited speech** on “Searching for patterns in EO data using information theory” at the 2018 Big Geospatial data and Data Science Workshop, Wuhan, P.R. China, Sept. 2018.

- **Invited speech in the Forum of Science and Humanities** on “Remote sensing and human activities: a new research path for social sciences and human health monitoring”, Hunan University, Changsha, P.R. China, Sept. 2018.
- **Plenary speech** on “Linear and non-linear unmixing of hyperspectral data” **at the OSA Optical Sensor and Sensing Congress**, Vancouver (Canada), July 2021.

d) Tutorials

- **Half-day tutorial** on “Urban Remote Sensing Applications” at the 2004 IEEE International Geoscience and Remote Sensing Symposium, Anchorage, Alaska, USA, Sept. 2004.
- **Full-day tutorial** on “InSAR and LIDAR applications and data fusion” at the 2007 Brazilian Symposium on Remote Sensing, Florianopolis, Brazil, April 2007.
- **Tutorial (1.5 hours)** on “Hyperspectral mapping of urban areas” at the 1st HYPERINET Summer School, Caceres (Spain), November 2007.
- **Full-day tutorial** on “Very High Spatial Resolution & Optical Sensors”, at the 2008 International Summer School on Very High Resolution Remote Sensing, Grenoble Institute of Technology, Grenoble, France, September 2008.
- **Full-day tutorial** on “Fundamentals and Applications of Data Fusion in Remote Sensing” at Instituto Geografico Augustin Codazzi, Bogotá, Colombia, Feb. 2009.
- **Full-day tutorial** on “InSAR and LIDAR applications and data fusion” at the 2009 Brazilian Symposium on Remote Sensing, Natal, Brazil, April 2009.
- **Tutorial (2 hours)** on “Geospatial data fusion: from theory to practice” at the 2011 PhD School on “Data fusion and high performance computing onboard aircrafts”, Pavia (Italy), September 2011.
- **Tutorial (2 hours)** on “Remote sensing and homeland security” at the 2011 SCUDO PhD School, Naples (Italy), October 2011.
- **Full-day tutorial** on “Optical remote sensing” at the 2012 Summer School on “Earth changes: observe, measure and model”, Pavia (Italy), June 2012.
- **Tutorial (2 hours)** on “Multispectral urban remote sensing and data fusion” at the 2012 IEEE GRSS Summer School, Munich (Germany), July 2012.
- **Tutorial (2 hours)** on “Past, present and future of urban remote sensing” at the 2014 PhD School on “Data fusion of Risk-related Remotely Sensed and Geospatial Data”, Pavia (Italy), September 2014.
- **Tutorial (3 hours)** on “Urban remote sensing” at the GRSS/CONAE Workshop on “Remote Sensing at its Applications”, Buenos Aires (Argentina), Nov. 2014.
- **Tutorial (2 hours)** on “Hyperspectral data processing” at the GRSS/CONAE Workshop on “Remote Sensing at its Applications”, Buenos Aires (Argentina), Nov. 2014.
- **Tutorial (3 hours)** on “Change detection” at the GRSS/CONAE Workshop on “Remote Sensing at its Applications”, Buenos Aires (Argentina), Nov. 2014.
- **Tutorial (3 hours)** on “Data fusion” at the 2nd GRSS/CONAE Workshop on “Remote Sensing at its Applications”, Buenos Aires (Argentina), Oct. 2015.
- **Tutorial (3 hours)** on “Data fusion” at the 2021 Indian Geoscience and Remote Sensing Symposium, virtual (India), Dec. 2021.

Research Projects and Contracts

a) Projects funded by the Italian Space Agency (ASI)

a.1) Project coordinator

- 1) Italy-Israel joint project USHIER: Utilizing SAR and Hyperspectral Integrated data for Emergency Response in the Mediterranean. (2014-2015).
- 2) Bando di Ricerca n. DC-UOT-2019-017: "Estrazione semi-automatica di informazioni da sequenze multitemporali di dati SAR multifrequenza e multimissione (MultiBigSARData)" (May 2021-Feb. 2023).
- 3) Management of the "Modulo ASI" activities for in the framework of the agreement between ASI and CONAE (Feb.-July, from 2021 to 2023).

a.2) Project unit coordinator

- 1) Techniques for time-frequency analysis of spaceborne images, subproject Wavelet and (multi)fractals for the interpretation of spaceborne imagery (1995).
- 2) Novel methods for fusion, management and analysis of data by spaceborne sensors for hydrological and Earth surface observations, subproject Classification and analysis of meteorological satellite sequences (1997-2000).
- 3) Development of algorithms for the fractal analysis of ENVISAT data (1998).
- 4) Development and validation of a fractal model of the sea surface (1999-2000).
- 5) Preliminary study for the fusion of MERIS and ASAR data (1999).
- 6) Analysis of SRTM (Shuttle Radar Topography Mission) data (2000).
- 7) Analysis and fusion of ASAR and MERIS data of urban areas (2000-2001)
- 8) Exploitation of COSMO/SkyMed data for Earth surface monitoring (2001).
- 9) Analysis and classification of optical and SAR data for environmental risk management (2001).
- 10) 2nd generation Multi-beam SAR (2003)
- 11) SARIS: SAR Image Interpretation System (2003).
- 12) SIASGE XL: Mapping product for the SIASGE constellation (2009).
- 13) Development and validation of multitemporal image methodologies for the monitoring of critical structures and infrastructures (2010 – 2012): project selected in reply to the COSMO/SkyMed Announcement of Opportunity in 2008.

b) Projects funded by ESA

b.1) (Co)-Project coordinator

- 1) **GPOD project** "Human settlement mapping for Africa using SAR" (ongoing): **Principal investigator**.
- 2) **Cat-1 project for exploitation of ALOS data** (ongoing): **Principal investigator**.
- 3) **DRAGON 2 Programme** (April 2008 – June 2012): Project "Satellite Monitoring of Urbanization in China for Sustainable Development": **Co-PI**.
- 4) **DRAGON 3 Programme** (June 2012 – July 2016): Project "Multitemporal Multisensor Analysis of Urban Agglomeration and Climate Impact in China for Sustainable Development": **Co-PI**.
- 5) **DRAGON 4 Programme** (July 2016 – July 2020): Project "Mapping and Monitoring Urban Agglomeration and Urban Capacity in China for Smart and Sustainable Cities": **Co-PI**.

6) **DRAGON 5 Programme** (started July 2021): **Co-PI**.

b.2) Project unit coordinator

- 1) **Cat-1 project for exploitation of ENVISAT data** (1999): Development and validation of a fractal model of the sea surface. **Responsible for the research unit of Pavia**.
- 2) **ESA GMES Service Elements: GMES Urban Services – GUS** (2004): **Responsible for the research unit of Pavia**.
- 3) **Information Image Mining in Time Series (IIM-TS)** (May 2007 – September 2009): **Responsible for the research unit of Pavia**.
- 4) **ESA GMES Service Elements: RESPOND** (Jan 2009 – June 2010): **Chair of the Independent Service Validation Group**.
- 5) **ESA Innovator III: EO4Urban** (June 2015 – June 2017): **Responsible for the research unit of Pavia**.
- 6) **ESA CCI_HRLC** (Sept. 2018 – Sept. 2021): **Responsible for the research unit of Pavia**.

c) Projects funded by the European Commission

c.1) Project coordinator

- 1) **TOLOMEO** (July 2011 – November 2014), Open TOoLs for Multi-risk assessment using Earth Observation data.

c.2) Project unit coordinator

- 1) **GMOSS** (Jan. 2007 – Feb. 2008), Network of Excellence “Global MOnitoring for Security and Stability”. **Responsible for the research unit of Pavia**.
- 2) **HYPERINET** (Feb. 2007 – Jan. 2011): Marie Curie Research and Training Network on “Hyperspectral Imaging Network”. **Responsible for the research unit of Pavia, WP Coordinator for WP4 – “Hyperspectral data processing chain definition” and Quality Manager for the whole network**.
- 3) **DORII** (Feb. 2008 – July 2010), “Deployment of Remote Instrumentation Infrastructure”. **Responsible for the research unit of EUCENTRE**.
- 4) **MARSITE** (Nov. 2012 – Apr. 2016), “New Directions in Seismic Hazard Assessment through Focused Earth Observation in the Marmara Supersite”. **Responsible for the research unit of Pavia**.
- 5) **G-SEXTANT** (Jan. 2013 – March 2015), “Service Provision of Geospatial Intelligence in EU External Actions Support”. **Responsible for the research unit of Pavia**.

c.3) Project unit member

- 1) **NAVISTO** (Apr. 2004 – June 2006): Interreg-III project (NAVigation System Technology Opportunities”.
- 2) **SAFER** (Dec. 2008 – June 2012): FP6 Services and Applications For Emergency Response
- 3) **EOXPOSURE** (March 2017 – Feb. 2021)
- 4) **PULSE** (Nov. 2016 – Oct. 2020)

d) Projects funded by international organizations

d.1) Project coordinator

- 1) **GED4GEM** (November 2010 – October 2013), Global Exposure Database for GEM (funded by the Global Earthquake Model initiative).
- 2) **Hyperpectral Data Exploitation for Urban Land Cover Analysis** (October 2004 – July 2005), HySens project (funded by DLR).

d.2) Project member

- 1) **IDCT** (November 2010 – May 2013), Inventory Data Capture Tools for GEM (funded by the Global Earthquake Model initiative).

e) Other projects

e.1) Project coordinator

- 1) **Monitoring of catastrophic phenomena at different spatial and temporal scales using airborne and spaceborne images and GIS** (1999-2001), funded by UNIPV as an internal research project.
- 2) **Internationalization of the PhD schools in Electronics Engineering, Computer Science and Bioengineering at the University of Pavia and the Polytechnic of Milan** (2010-2013), funded by CARIPLO Foundation.

f) Contracts

1) CSELT

- a. “GPR data analysis” (1999, ~20 kEuro).

2) ERICSSON

- a. “Models for SDH modems” (1999, ~50 kEuro);
- b. “Advanced modeling of SDH modems” (2000, ~20 kEuro);
- c. “Synchronization of point-to-multipoint radio systems” (2000, ~50 kEuro);
- d. “Last generation modem modelization” (2003, ~40 kEuro);
- e. “XPIC modelization” (2003, ~50 kEuro).

3) STMicroelectronics

- a. Funds coming from the “Studium” of Microelectronics for research on “DSP for magnetic drive read/write channel” (2008-2010, ~40 kEuro);
- b. Cofinancing for a Post-doc position “Dote Ricercatore” co-funded by the Lombardy Region for research on “DSP for 10 Gb Ethernet cable interface and digital communications” (2011-2013, ~40 kEuro),

4) Google Foundation

- a. “Human settlement mapping using Earth Engine” (2013, ~50 kUSD).
- b. "Automatic multitemporal mapping of urban areas for risk-related exposure analysis", Google Earth Engine Research Awards Program (2014, 42 kUSD)

5) GEO

- a. Contribution for the student activities of JURSE 2013 (~4 kEuro)

Didactic experience

a) Seminars

- 1) “Digital Signal Processing” from 1994/1995 to 1996/1997 within the course of “Radiocommunications Systems”;

- 2) “Microwave integrated circuits” in 1994/1995 within the course of “Microwaves”;
- 3) Exercises since 1994/1995 until 2000/2001 within the course of “Electrical Communications”.

b) B.Sc. and M.Sc. Courses at the University of Pavia

- a) “Electrical Communications DU” since 1998/1999 until 2000/2001;
- b) “Signal Theory” since 2001/2002 until 2011/2012;
- c) “Remote Sensing Systems” since 2004/2005 until 2011/2012;
- d) “Systems for Environmental Remote Sensing” since 2002/2003 until 2011/2012;
- e) “Radiocommunications Systems” since 1997/1998 until 2004/2005;
- f) “Digital Communications”, since 2005/2006 until 2010/2011, and since 2014/2015;
- g) “Laboratory of Telecommunications”, since 2006/2007 until 2010/2011;
- h) “Digital Signal Processing” 2011/2012 and 2013/2014;
- i) “Electrical Communications” since 2011/2012;
- j) “Wireless Sensor Network for biomedical applications”, 2017/2018 and 2018/2019.

c) M.Sc. Courses for International Schools

- “Remote Sensing and Earthquake Engineering”, open to all students of the ROSE School (European School for Advanced Studies in Reduction of Seismic Risk), April 2008;
- “Visti dall’alto – Observed from the sky”, an introduction to remote sensing concepts for the 4th year of the Science and Technology class of IUSS – Istituto Universitario Studi Superiori, Nov. 2008 – Jan. 2009.
- “Image Processing II” for the Master in Geomatics and Natural Resources Evaluation organized by IAO – Istituto Agronomico d’Oltremare, in Dec. 2008, 2009, 2010, 2013.
- “Telecommunications, remote sensing and crowdsourcing” (together with Fabio Dell’Acqua) for the UME (Understanding and Managing the extremes) School on “Risk and Emergency Management”, Nov. – Dec. 2011.
- Lecture (3 hours) on “Global exposure database” in the course “Natural hazard risk assessment and management from a public sector perspective” by J. Schneider, for the UME (Understanding and Managing the extremes) School on “Risk and Emergency Management”, 14 June 2013.

d) Other didactic/university activities

- Member of the Freshmen Committee, responsible for all activities in the area of ICT from 2007 to 2010.
- Chair of the Committee for the didactic re-organization of the undergraduate and graduate schools in Electronic Engineering and Telecommunications in 2009.
- Responsible for the ERIPAVIA Telecommunications didactic laboratory, funded by ERICSSON LAB Italy, from 1999 to 2014.
- Member of the Scientific Committee of the Centro Servizi “Viterbi”, for development of the Mantua university site, from 2009 to 2014.
- Responsible for incoming and outgoing ERASMUS students in Electronic Engineering from 2013 to May 2016.
- Deputy Director of the PhD School in Electronic, Computer, and Electrical Engineering of the University of Pavia from March 2016 to September 2018.

- Responsible for the Bachelor Degree in Electronic and Computer Engineering (Referente del Corso di Laurea in Ingegneria Elettronica e Informatica) of the University of Pavia from June 2016 to September 2018.
- Responsible for all courses in the ICT area (Presidente del Consiglio Didattico di Ingegneria dell'Informazione) of the University of Pavia from October 2018 to September 2021.
- Member of the University Quality Committee (Presidio di Qualità di Ateneo) since October 2018.