

# Pietro Savazzi

## Curriculum Vitae

### CONTACT DATA

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**Wireless communications and sensor systems**, with a focus on modulation and coding, adaptive signal processing and MIMO architectures.

### PROFESSIONAL EXPERIENCE

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1/2012-... University of Pavia Pavia, Italy

*Assistant Professor*

- \* Research and teaching on wireless sensor networks, digital communications and digital signal processing (using MATLAB for system simulations and FPGA based boards for experimental evaluations).
- Principal Investigator of research contracts with several Telecom Industries.
- Participating to the Italian National Project PRIN “GRETA-GREen Tags”, <http://www.greentags.eu/>.
- Member of the Technical Program Committee of conference series “WiSEE” on Wireless for Space and Extreme Environments, since 2013.

2/2003-12/2011 University of Pavia Pavia, Italy

*Contract Professor/ Research Associate*

- \* Research and teaching on wireless networks & digital signal processing (using MATLAB for system simulations).
- Scientific consultancy within research contracts with Ericsson Lab Italy, Siemens ICN and ST Microelectronics.
- Contract researcher for the Italian National Program FIRB “Enabling Technologies for Wireless Reconfigurable Terminals,” in the system design and networking aspects workgroup (2003-2006).
- Teaching of several courses, as a contract professor, on digital signal processing and communication theory, since 2004.
- Supervisor and co-supervisor of different thesis for graduation of Bachelor, Master and Ph.D. students. Scientific Publications in different national and international journals. Participation to several national and international conferences.

6/2001-1/2003 Marconi Mobile Genoa, Italy

*System Designer Team Leader*

- \* R&D in UMTS Node B system design.
- Team leader of the system design group in the advance radio solutions unit of the UMTS product unit.
- 3GPP physical layer and networking aspects – system test and verification

4/1999 - 6/2001 Ericsson Milan, Italy

*System Designer*

- \* R&D in the field of SDH high capacity modems for microwave radio relay links and point to multi-point microwave radio access systems (ETSI BRAN Hyperaccess)
- FDD and TDD-TDMA radio access systems.
- Contribution to ETSI BRAN Hiperaccess standardization process.

## EDUCATION

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- 11/1995 – 4/1999      University of Pavia    Pavia, Italy
- \* Ph.D. course in Electronics Engineering & Computer Science.
  - \* Thesis on Mobile Radio Systems Transceivers: Equalization Techniques and Channel Models.
- 10/1989 – 7/1995      University of Pavia    Pavia, Italy
- \* 5-year degree in Electronics Engineering, Telecommunications curriculum.
  - \* Final thesis on the analysis of multispectral remotely sensed images based on fuzzy clustering.

## RESEARCH PROJECTS

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- 2014-2016. Higher Data Rate Modem Design. Funded by SIAE Microelettronica, as the principal investigator.
- 2013-2016. Italian National Project PRIN “GRETA-GREEN Tags”, <http://www.greentags.eu/>.
- 2013. Packets modem design. Funded by FEROX COMMUNICATIONS S.L., as the principal investigator.
- 2012. High capacity M-QAM modem. Funded by SKYLINKS SRL, as the principal investigator.
- 2006-2008. Design of novel receivers and channel coding schemes for the next generation hard-disk drives (HDD). Funded by ST Microelectronics, Milan, Italy.
- 2006-2007 NAVISTO (NAVIGATION System Technology Opportunities): European Programme devoted to create opportunities in GNSS applications (technology transfer project).
- 2005. Design of a complete digital receiver for an uplink BRAN Hiperaccess terminal - Study and design of a receiver based on cross-polar interference cancellation. Funded by Ericsson Lab Italy, Milan Italy.
- 2004. Optimization of low power consumption decoder for shortened Reed-Solomon codes. Funded by Ericsson Lab Italy, Milan Italy.
- 2003-2006. Italian National Program FIRB “Enabling Technologies for Wireless Reconfigurable Terminals”.
- 2003. Validation of mobile radio system models. Funded by Siemens ICN, Milan, Italy.
- 1998. Error correcting schemes for digital radio relay links, supporting ATM traffic (funded by Marconi, Genoa, Italy)
- 1997-1998. Innovative solutions for DVB-T (Digital Video Broadcasting – Terrestrial) OFDM receiver equalization. Funded by ST Microelectronics, Milan, Italy.

## PUBLICATIONS

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- **18 papers on international peer-reviewed journals**, of which many on IEEE journals.
- **48 publications at international conferences**.
- **One patent and two contributions** to ETSI standardization.

## Recent publications

### Journal papers

- [J.1] Emanuele Goldoni, Pietro Savazzi, Anna Vizziello, “A Novel Channel Coding Scheme for RFID Generation-2 Systems,” *Electronics* 2017, 6(1), 4; doi:[10.3390/electronics6010004](https://doi.org/10.3390/electronics6010004).
- [J.2] Anna Vizziello, Pietro Savazzi, “Efficient RFID Tag Identification Exploiting Hybrid UHF-UWB Tags and Compressive Sensing,” *IEEE Sensors Journal*, Volume: 16, Issue: 12, June 15, 2016, DOI: [10.1109/JSEN.2016.2551375](https://doi.org/10.1109/JSEN.2016.2551375).
- [J.3] Anna Vizziello, Pietro Savazzi, Roberta Borra, “Joint Phase Recovery for XPIC System Exploiting Adaptive Kalman Filtering,” *IEEE Communications Letters*, Volume: 20, Issue: 5, May 2016, DOI: [10.1109/LCOMM.2016.2542798](https://doi.org/10.1109/LCOMM.2016.2542798).
- [J.4] Roberto Alesii, Piergiuseppe Di Marco, Fortunato Santucci, Pietro Savazzi, Roberto Valentini, Anna Vizziello, “Backscattering UWB/UHF hybrid solutions for multi-reader multi-tag passive RFID systems,” *EURASIP Journal on Embedded Systems*, no. 1, Springer International Publishing, 2016, DOI: [10.1186/s13639-016-0031-0](https://doi.org/10.1186/s13639-016-0031-0).
- [J.5] Luca Pasca, Niccolo Ricardi, Pietro Savazzi, Fabio Dell'Acqua, Paolo Gamba, “Comparison of efficient sparse reconstruction techniques applied to inverse synthetic aperture radar images,” *Journal of Applied Remote Sensing*, vol. 9, no. 1, International Society for Optics and Photonics, doi:[10.1117/1.JRS.9.095071](https://doi.org/10.1117/1.JRS.9.095071), 2015.
- [J.6] P. Gamba, E. Goldoni, P. Savazzi, P.G. Arpesi, C. Sopranzi, J-F. Dufour, and M. Lavagna, “Wireless Passive Sensors for Remote Sensing of Temperature on Aerospace Platforms,” *IEEE Sensors Journal*, vol. 14, no. 11, November 2014, doi: [10.1109/JSEN.2014.2353623](https://doi.org/10.1109/JSEN.2014.2353623).

### Conference papers

- [C.1] Meenupriya Swaminathan, Anna Vizziello, Davy Duong, Pietro Savazzi and Kaushik R. Chowdhury, “Beamforming in the Body: Energy-efficient and Collision-free Communication for Implants,” *IEEE International Conference on Computer Communications, INFOCOM 2017*, 1-4 May 2017, Atlanta, GA, USA.
- [C.2] Pietro Savazzi, Anna Vizziello, “Carrier synchronization in distributed MIMO satellite links,” *IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE 2015)*, University of Central Florida, Orlando, FL, USA, 14-16 Dec. 2015, DOI: [10.1109/WiSEE.2015.7392990](https://doi.org/10.1109/WiSEE.2015.7392990).

- [C.3] Roberto Alesii, Piergiuseppe Di Marco, Fortunato Santucci, Pietro Savazzi, Roberto Valentini, Anna Vizziello, "Multi-reader multi-tag architecture for UWB/UHF radio frequency identification systems," 2015 International EURASIP Workshop on RFID Technology (EURFID), Oberaudorf, Germany, 22-23 Oct. 2015, DOI: [10.1109/EURFID.2015.7332381](https://doi.org/10.1109/EURFID.2015.7332381).
- [C.4] Nicolo Decarli, Anna Guerra, Francesco Guidi, Marco Chiani, Davide Dardari, Alessandra Costanzo, Marco Fantuzzi, Diego Masotti, Stefania Bartoletti, Jinous Shafiei Dehkordi, Andrea Conti, Aldo Romani, Marco Tartagni, Roberto Alesii, Piergiuseppe Di Marco, Fortunato Santucci, Luca Roselli, Marco Virili, Pietro Savazzi, Maurizio Bozzi, "The GRETA architecture for energy efficient radio identification and localization, 2015 International EURASIP Workshop on RFID Technology (EURFID), Oberaudorf, Germany, 22-23 Oct. 2015, DOI: [10.1109/EURFID.2015.7332377](https://doi.org/10.1109/EURFID.2015.7332377).
- [C.5] P. Gamba, E. Goldoni, P. Savazzi, P.G. Arpesi, C. Sopranzi, J-F. Dufour, and M. Lavagna, "Communication aspects in wireless passive sensing on spacecrafts," IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE 2014), European Space Agency, ESTEC, Noordwijk, The Netherlands, October 30–31, 2014, doi: 10.1109/WiSEE.2014.6973076.