

## PERSONAL INFORMATION



## Gaetano Giunta

 University of "Roma TRE", Dept. of Engineering, via V. Volterra 62, 00146 Rome, Italy



 <http://host.uniroma3.it/laboratori/sp4te/staff/giunta.html>

 Skype:

Sex | Date of birth | Nationality

## POSITION

## Full Professor of Telecommunications Engineering

- Professor of *Signal Processing for Biomedical Engineering*
- Professor of *Signal Processing for Telecommunications*
- Professor of *Wireless Telecommunications*
- Coordinator of Teaching College in Electronic Engineering at "Roma Tre" University

## WORK EXPERIENCE

2005-today

## Full Professor

University of "Roma TRE", Rome, Italy.

- Teaching, research, and management.

**Business or sector** ICT, Academy

2001-2005

## Associate Professor

University of "Roma TRE", Rome, Italy.

- Teaching and research.

**Business or sector** ICT, Academy

1992-2001

## Researcher

University of "Roma La Sapienza", Rome, Italy.

- Teaching and research.

**Business or sector** ICT, Academy

1989-1992

## Researcher

University of "Roma Tor Vergata", Rome, Italy.

- Teaching and research.

**Business or sector** ICT, Medical Electronics, Academy

1988-1990

## Research Fellow

EPFL, Lausanne, Switzerland.

- Basic and Applied Research.

**Business or sector** ICT, Academy

1986-1987 **Research Grantee**  
 CNR Institute of Information Processing, Pisa, Italy.  
 ■ Basic and Applied Research.  
 Business or sector ICT

1985-1989 **Research Fellow**  
 CNR Institute of Clinical Physiology, Pisa, Italy.  
 ■ Basic and Applied Research.  
 Business or sector Medical Technology and Research

EDUCATION AND TRAINING

1987-1989 **Doctor of Philosophy (PhD)**  
 University of "Roma La Sapienza", Rome, Italy.  
 ■ Information and Communication Technology.

1978-1985 **Master degree ("Laurea") in Engineering**  
 University of Pisa, Pisa, Italy.  
 ■ Electronic Engineering.

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s) self-assessment	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B1	B2	B2	B2	B2
French	B2	B2	B2	B1	B1

Levels: A1/A2: Basic user - B1/B2: Independent user - C1/C2 Proficient user  
[Common European Framework of Reference for Languages](#)

Communication skills ■ good communication skills gained through my experience in scientific conferences

Organisational / managerial skills ■ academic management (currently coordinator of teaching college)  
 ■ leadership (currently responsible for a team of about 5 people)

Job-related skills ■ basic and applied research in ICT and medical technology  
 ■ design of algorithms for processing data, signals, and images  
 ■ expert of statistical data analysis and performance  
 ■ inter-disciplinary applications of engineering concepts to economics and medicine

Digital competence

SELF-ASSESSMENT				
Information processing	Communication	Content creation	Safety	Problem solving
Proficient user	Proficient user	Proficient user	Proficient user	Proficient user

Levels: Basic user - Independent user - Proficient user  
[Digital competences - Self-assessment grid](#)

- operating systems: Windows, Linux, Mac OsX.
- networking: wireless, wired, mobile applications

Driving licence B - level

ADDITIONAL INFORMATION

Publications

Prof. Giunta is author of more than one hundred scientific papers, as detailed in the following public data bases:

- <https://www.scopus.com/authid/detail.uri?authorId=7006413308>
- <http://orcid.org/0000-0002-1514-2576>
- [https://www.researchgate.net/profile/Gaetano\\_Giunta2](https://www.researchgate.net/profile/Gaetano_Giunta2)
- [https://scholar.google.com/citations?hl=en&user=x53v83IAAAAJ&view\\_op=list\\_works&sortby=pubdate](https://scholar.google.com/citations?hl=en&user=x53v83IAAAAJ&view_op=list_works&sortby=pubdate)

Among them, a list of major journal papers is:

- F. Benedetto, G. Giunta, M. Renfors - "A Spectrum Sensing Algorithm for Constant Modulus Primary Users Signals" - IEEE Communications Letters, 2016.
- F. Benedetto, G. Giunta, L. Mastroeni - "A Computational Method for Predicting the Entropy of Energy Market Time Series", Lecture Notes in Economics and Mathematical Systems, Springer publ., vol. 682, pp. 39-44, Jan. 2016.
- F. Benedetto, G. Giunta, L. Mastroeni - "A maximum entropy method to assess the predictability of financial and commodity prices", Digital Signal Processing, Elsevier publ., vol. 46, pp. 19-31, 2015.
- F. Benedetto, A. Calvi, F. D'Amico, G. Giunta - "Applying Telecommunications Methodology to Road Safety for Rear-End Collision Avoidance", Transportation Research - Part C: Emerging Technologies, Elsevier publ., vol. 50, pp. 150-159, Jan. 2015.
- F. Benedetto, G. Giunta, E. Guzzon - "A novel "single-path" vs. "few-path" test based on higher order statistics to possibly start-up coherent combining", Journal of Applied Research and Technologies, vol. 13, no. 1, pp. 7-19, 2015.
- F. Benedetto, G. Giunta, E. Guzzon, M. Renfors - "Effective Monitoring of Freeloading User in the Presence of Active User in Cognitive Radio Networks" - IEEE Trans. on Vehicular Technology , vol. 63, no. 5, pp. 2443-2450, June 2014.
- F. Benedetto, G. Giunta, E.S. Lohan, M. Renfors, "A Fast Unambiguous Acquisition algorithm for BOC-Modulated Signals", IEEE Trans. on Vehicular Technology, vol. 62, no. 3, pp. 1350-1355, 2013.
- E. Guzzon, F. Benedetto, G. Giunta, "A New Test for Initial Code Acquisition of Correlated Cells", IEEE Trans. on Vehicular Technology, vol. 62, no. 5, pp. 2349-2358, 2013.
- F. Benedetto , G. Giunta, "Detecting Approaching sources in Infrastructure-Less Vehicular Communications by a Simple Signal Processing Method" - Journal of Communications (JoC) , vol. 8, no. 6, pp. 383-388, 2013.
- G. Giunta, F. Benedetto, "Empirical Case Study of Binary Options Trading: an Interdisciplinary Application of Telecommunications Methodology to Financial Economics", vol. 4, no. 4, pp. 54-63, 2012. International Journal of Interdisciplinary Telecommunications and Networking (IJITN), vol. 4, no. 4, pp. 54-63, 2012.
- F. Benedetto, G. Giunta, A. Tedeschi, "Performance Analysis of Tracing Watermarking in the YST Domain for 3G Video-on-Demand Applications", International Journal of Sensor Networks and Data Communications, vol. 1, pp. 1-7, 2012.
- F. Benedetto, G. Giunta, "Security Improvement of a Transformed-key Asymmetric Watermarking System", Signal Processing Research (SPR), 2012.
- D. Caramella, G. Giunta, L. Balbi, D. Greco, "Phase image processing for Dixon fat/water separation in low field MRI", International Journal of Computer Assisted Radiology and Surgery, vol. 7, p. 75-76, Springer publ., 2012.

Publications  
(follows)

- F. Benedetto, G. Giunta, S. Bucci, "A Unified Approach for Time Delay Estimators in Spread Spectrum Communications", *IEEE Trans. on Communications*, vol. 59, pp. 3421-3429, Dec. 2011.
- F. Benedetto, G. Giunta, "A Fast Time Delay Estimator of PN Signals", *IEEE Trans. on Communications*, pp. 2057-2062, Aug. 2011.
- G. Oligeri, S. Chessa, R. Di Pietro, G. Giunta, "Robust and Efficient Authentication of Video Stream Broadcasting", *ACM Transactions on Information and System Security (TISSEC)*, vol. 14, issue 1, pp. 1-25, May 2011.
- G. Oligeri, S. Chessa, G. Giunta, "Loss Tolerant Video Streaming Authentication in Heterogeneous Wireless Networks", *Computer Communications*, pp. 1307-1315, Elsevier Science, Feb. 2011.
- F. Benedetto, G. Giunta, "On Efficient Code Acquisition of Optical Orthogonal Codes in Optical CDMA Systems", *IEEE Trans. on Communications*, pp. 438-441, Feb. 2010.
- F. Benedetto, A. Curcio, G. Giunta - "Dynamic QoS Evaluation of Multimedia Contents in Wireless Networks by Double-Boomerang Watermarking", *Future Internet - Special Issue on "QoS in Wired and Wireless IP Networks"*, vol. 2, issue 1, pp. 60-73, March 2010.
- F. Benedetto, G. Giunta, A. Neri, "A Bayesian Business Model for Video-Call Billing for End-to-End QoS Provision", *IEEE Trans. on Vehicular Technology*, vol. 58, no. 2, pp. 836-842, 2009.
- F. Benedetto, G. Giunta, A Self-Synchronizing Method for Asynchronous Code Acquisition in Band-Limited Spread Spectrum Communications, *IEEE Trans. on Communications*, vol. 57, no. 8, pp. 2410-2419, 2009.
- F. Benedetto, G. Giunta, C. Belardinelli - "Audio Watermarking of MP3 Music Signals for Quality Assessment in Multimedia Communications", *Mediterranean Journal of Electronics and Communications*, vo. 5 no. 3, pp. 106-113, 2009.
- F. Benedetto, G. Giunta - "Two-Dwell Synchronization Techniques and Mimo Systems for Performance Improvements of 3G Mobile Communications", *International Journal of Communications, Network and System Sciences (IJCNS)*, vol. 6, pp. 511-517, 2009.
- F. Benedetto, G. Giunta - "Fractional Sampling Improves Performance of UMTS Code Acquisition", *Engineering, Scientific Research Publishing, Irvine, CA, USA*, vol.1, pp. 1-6, 2009.
- F. Benedetto, G. Giunta, L. Vandendorpe, "A Blind Equalization Algorithm Based on Minimization of Normalized Variance for DS/CDMA Communications", vol. 57, pp. 3453-3461, *IEEE Trans. on Vehicular Technology*, 2008.
- G. Giunta, F. Benedetto, "Spread-Spectrum Code Acquisition in the Presence of Cell Correlation", *IEEE Trans. on Communications*, vol. 55, no. 2, pp. 257-261, 2007.
- G. Giunta, L. Vandendorpe, F. Benedetto, "All-Pass Pre-Filtering in Pre-Post-Rake Schemes for Spread-Spectrum Communications", *IEEE Trans. on Signal Processing*, vol. 55, pp. 4330-4334, 2007.
- F. Benedetto, G. Giunta, A. Neri - "QoS Assessment of 3G Video-Phone Calls by Tracing Watermarking Exploiting the New Colour Space YST" - *IET Communications (formerly IEE Proceedings on Communications)*, vol. 1, is. 4, pp. 696-704, 2007.
- G. Giunta, L. Vandendorpe, F. Benedetto, "Improving Pre-Post Rake Schemes for DS/CDMA Mobile Communications", *Mediterranean Journal of Electronics and Communications*, vol. 1, pp. 16-24, 2005.
- A. Tedeschi, G. Giunta, et al., "Reliability of Signal Processing Technique for Pavement Damages Detection and Classification using Ground Penetrating Radar", *IEEE Sensors Journal*, vol. 5, no. 3, pp. 471-480, 2005.
- G. Giunta, A. Neri, L. Vandendorpe, "Initial Code Synchronization of W-CDMA Mobile Systems Exploiting Local Phase Coherence and Pisarenko Estimation", *IEEE Trans. on Communications*, vol. 53, no. 1, pp. 48-52, 2005.
- A. Tedeschi, G. Giunta, et al., "Reliability of radar inspection for detection of pavement damages", *International Journal of Road Material and Pavement Design*, Hermes Science, vol. 5, no. 1, pp. 93-110, 2004.
- G. Giunta, L. Vandendorpe, "A Rayleigh-ness Test for DS/SS Code Acquisition", *IEEE Transactions on Communications*, 2003.
- G. Giunta, A. Neri, M. Carli, "Constrained Optimization of Non-Coherent Serial Acquisition of Spread-Spectrum Code by Exploiting the Generalized Q-Functions", *IEEE Transactions on Vehicular Technology*, 2003.
- P. Campisi, M. Carli, G. Giunta, A. Neri, "Blind Quality Assessment System for Multimedia Communications Using Tracing Watermarking," *IEEE Transactions on Signal Processing*, pp. 996 -1002, 2003.
- G. Giunta, "Generalized Q-Functions for Application to Non-Coherent Serial Detection of Spread-Spectrum Communication Signals", *IEEE Trans. on Signal Processing*, vol. SP-48, n. 5, pp. 1506-1513, 2000.
- G. Giunta, "Fine estimators of 2D parameters and application to spatial shift estimation", *IEEE Trans. on Signal Processing*, vol. SP-47, n. 12, pp. 3201-3207, 1999
- G. Giunta, U. Mascia, "Estimation of Global Motion Parameters by Complex Linear Regression", *IEEE Trans. on Image Processing*, vol. IP-8, n. 11, pp. 1652-1657, 1999.
- G. Giunta, "A Digital Algorithm for Maximization of Symmetric Ambiguity Functions and Application to Signal Time-Delay Estimation", *IEE Proceedings - Vision, Image and Signal Processing*, vol. 146, no. 6, pp. 313-317, 1999.
- G. Giunta, "Fast estimators of time delay and Doppler stretch based on discrete-time methods", *IEEE Trans. on Signal Processing*, vol. SP-46, n. 7, pp. 1785-1797, 1998.
- G. Giunta, "Complex hybrid correlators: an extended analysis of their performance", *IEEE Trans. on Signal Processing*, vol. SP-43, n. 6, pp. 1531-1535, 1995.
- G. Giunta, "Accuracy of a time delay estimator with unknown sampled signals" *Signal Processing*, vol. 45, n. 1, pp. 131-136, Elsevier Science publ., 1995.
- A. Bellini, G. Figalli, G. Giunta, "A stochastic observer for estimation of induction motor rotor flux", *International Journal of Power and Energy Systems*, vol. 13, n. 3, pp. 93-96, IASTED publ., 1993.
- G. Giunta, "Spectral noise and ultrasonic tissue characterization", *Frontiers of Medical and Biological Engineering*, vol. 4, n. 3, pp. 209-217, VSP publ., Tokyo, Giappone, 1992.
- G. Giunta, "A note on the computational complexity of high correlation estimators", *IEEE Trans. on Signal Processing*, vol. SP-39, n. 2, pp. 485-486, 1991.
- G. Giunta, G. Jacovitti, A. Neri, "Band-pass non-linear systems identification by higher order cross-correlation", *IEEE Trans. on Signal Processing*, vol. SP-39, n. 9, pp. 2092-2095, 1991.

Publications  
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- G. Giunta, A. Neri, "Neural correlation based on the IPFM model", IEEE Trans. on Systems, Man, and Cybernetics, vol. SMC-20, n. 1, pp. 262-268, 1990.
- G. Giunta, "Perceptual redundancy reduction in image sequences", Signal Processing, vol. 20, n. 2, pp. 187-188, Elsevier Science publ., 1990.
- G. Giunta, T.R. Reed, M. Kunt, "Image sequence coding using oriented edges", Signal Processing: Image Communication, vol. 2, n. 4, pp. 429-440, Elsevier Science publ., 1990.
- T.R. Reed, G. Giunta, et al., "Perceptually motivated techniques for high compression image sequence coding", EPFL Supercomputing Review, n. 1, pp. 6-11, 1989.
- L. Landini, G. Giunta, "A method for quantitative ultrasonic backscatter estimates in the presence of phase distortion", IEEE Trans. on Biomedical Engineering, vol. BME-34, n. 1, pp. 37-42, 1987.
- G. Giunta, L. Landini, "Sviluppo di un modello interpretativo per la caratterizzazione dei tessuti biologici mediante ultrasuoni", Rassegno di Bioingegneria, Pitagora ed., vol. 11, p. 1-13, 1986.