

CURRICULUM VITAE di:

Nominativo	Riccardo Barbieri
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Posizione accademica

Macrosettore:	09/G - INGEGNERIA DEI SISTEMI E BIOINGEGNERIA
Settore Concorsuale:	09/G2 - BIOINGEGNERIA
Settore Scientifico Disciplinare:	ING-INF/06 BIOINGEGNERIA ELETTRONICA E INFORMATICA
Qualifica:	Professore Associato
Anzianità nel ruolo:	Settembre 2015
Sede Universitaria:	Politecnico di Milano
Struttura di appartenenza (dipartimento o altro)	Dip. Di Elettronica, Informatica e Bioingegneria

Posizioni ricoperte precedentemente nel medesimo ateneo o in altri

Periodo	Fascia	Ateneo

Pubblicazioni Scientifiche

- Barbieri R, Waldmann RA, Di Virgilio V, Triedman JK, Bianchi AM, Cerutti S, Saul JP. Continuous quantification of baroreflex and respiratory control of heart rate by use of bivariate autoregressive techniques. *Annals of Noninvasive Electrocardiology*, 3:264-77, 1996.
- Di Virgilio V, Barbieri R, Mainardi LT, Strano S, Cerutti S. A multivariate time-variant AR method for the analysis of heart rate and arterial blood pressure. *Med Eng Phys*. 1997 Mar;19(2):109-24. PubMed PMID: 9203145.
- Mainardi LT, Bianchi AM, Furlan R, Piazza S, Barbieri R, Di Virgilio V, Malliani A, Cerutti S. Multivariate time-variant identification of cardiovascular variability signals: a beat-to-beat spectral parameter estimation in vasovagal syncope. *IEEE Trans Biomed Eng*. 1997 Oct;44(10):978-89. PubMed PMID: 9311167.

- Barbieri R, Bianchi AM, Triedman JK, Mainardi LT, Cerutti S, Saul JP. Model dependency of multivariate autoregressive spectral analysis: quantifying cardiovascular control using bivariate and trivariate models. *IEEE Eng Med Biol Mag.* 1997 Sep-Oct;16(5):74-85. PubMed PMID: 9313084.
- Barbieri R, Quirk MC, Frank LM, Wilson MA, Brown EN. A time-dependent analysis of spatial information encoding in the rat hippocampus. *Neurocomputing* 2000;32-33:629-635.
- Barbieri R, Quirk MC, Frank LM, Wilson MA, Brown EN. Construction and analysis of non-Poisson stimulus-response models of neural spike train activity. *J Neurosci Methods.* 2001 Jan 30;105(1):25-37. PubMed PMID: 11166363.
- Barbieri R, Quirk MC, Frank LM, Wilson MA, Brown EN. Diagnostic methods for statistical models of place cell spiking activity. *Neurocomputing* 2001;38:1087-1093.
- Barbieri R, Frank LM, Quirk MC, Solo V, Wilson MA, Brown EN. Construction and analysis of non-gaussian place field models of neural spiking activity. *Neurocomputing*; 44-46:309-314, 2002.
- Barbieri R, Parati G, Saul JP. Closed vs. open loop assessment of the heart rate baroreflex. *IEEE Eng Med Biol Mag.* 2001 Mar-Apr;20(2):33-42. PubMed PMID: 11321718.
- Brown EN, Barbieri R, Ventura V, Kass RE, Frank LM. The time-rescaling theorem and its application to neural spike train data analysis. *Neural Comput.* 2002 Feb;14(2):325-46. PubMed PMID: 11802915
- Barbieri R, Triedman JK, Saul JP. Heart rate control and mechanical cardiopulmonary coupling to assess central volume: a systems analysis. *Am J Physiol Regul Integr Comp Physiol.* 2002 Nov;283(5):R1210-20. PubMed PMID: 12376415.
- Barbieri R, Frank LM, Nguyen DP, Quirk MC, Solo V, Wilson MA, Brown EN. Dynamic analyses of information encoding in neural ensembles. *Neural Comput.* 2004 Feb;16(2):277-307. PubMed PMID: 15006097.
- Eden UT, Frank LM, Barbieri R, Solo V, Brown EN. Dynamic analysis of neural encoding by point process adaptive filtering. *Neural Comput.* 2004 May;16(5):971-98. PubMed PMID: 15070506.
- Barbieri R, Matten EC, Alabi AA, Brown EN. A point process model of human heart rate intervals: new definitions of heart rate and heart rate variability. *Am J Physiol Heart Circ Physiol.* 2005 Jan;288(1):H424-35. Epub 2004 Sep 16. PubMed PMID: 15374824.
- Carrington MJ, Barbieri R, Colrain IM, Crowley KE, Kim Y, Trinder J. Changes in cardiovascular function during the sleep onset period in young adults. *J Appl Physiol.* 2005 Feb;98(2):468-76. Epub 2004 Sep 24. PubMed PMID: 15448124.
- Barbieri R, Frank LM, Wilson MA, Brown EN. An analysis of hippocampal spatio-temporal representations using a Bayesian algorithm for neural spike train decoding. *IEEE Transactions on Neural Systems and Rehabilitation Engineering.* 2005 Jun;13(2):131-6. PubMed PMID: 16003890.
- Barbieri R, Brown EN. Analysis of heart dynamics by point process adaptive filtering. *IEEE Trans Biomed Eng.* 2006 Jan;53(1):4-12. PubMed PMID:16402597.
- Ergún A, Barbieri R, Eden UT, Wilson MA, Brown EN. Construction of point process adaptive filter algorithms for neural systems using sequential Monte Carlo methods. *IEEE Trans Biomed Eng.* 2007 Mar;54(3):419-28. PubMed PMID:17355053.
- Wyller VB, Barbieri R, Thaulow E, Saul JP. Enhanced vagal withdrawal during mild orthostatic stress in adolescents with chronic fatigue. *Ann Noninvasive Electrocardiol.* 2008 Jan;13(1):67-73. PubMed PMID: 18234008.
- Barbieri R, Brown EN. Application of dynamic point process models to cardiovascular control. *Biosystems.* 2008 Jul-Aug;93(1-2):120-5. Epub 2008 Apr 26. PubMed PMID: 18515000; PubMed Central PMCID: PMC2561955.
- Napadow V, Dhond R, Conti G, Makris N, Brown EN, Barbieri R. Brain correlates of autonomic modulation: combining heart rate variability with fMRI. *Neuroimage.* 2008 Aug 1;42(1):169-77. Epub 2008 Apr 30. PubMed PMID: 18524629; PubMed Central PMCID: PMC2603289.
- Wyller VB, Saul JP, Barbieri R, de Lange C, Hopp E, Norum IB, Thaulow E. Autonomic heart rate control at rest and during unloading of the right ventricle in repaired tetralogy of Fallot in adolescents. *Am J Cardiol.* 2008 Oct 15;102(8):1085-9. Epub 2008 Jul 31. PubMed PMID: 18929714; PubMed Central PMCID: PMC2645862.
- Chen Z, Brown E, Barbieri R. Assessment of autonomic control and respiratory sinus arrhythmia using point process models of human heart beat dynamics. *IEEE Trans Biomed Eng.* 2009 Jul;56(7):1791-802. Epub 2009 Mar 4. PubMed PMID: 19272971. PubMed Central PMCID: PMC2804879.
- Chen Z, Vijayan S, Barbieri R, Wilson MA, Brown EN. Discrete- and continuous-time probabilistic models and algorithms for inferring neuronal UP and DOWN states. *Neural Comput.* 2009 Jul;21(7):1797-1862. Epub Mar 26. PubMed PMID:19323637. PubMed Central PMCID: PMC2799196.

- Nguyen DP, Kloosterman F, Barbieri R, Brown EN, Wilson MA. Characterizing the dynamic frequency structure of fast oscillations in the rodent hippocampus. *Front Integr Neurosci*. 2009;3:11. Epub 2009 Jun 10. PubMed PMID: 19562084. PubMed Central PMCID: PMC2701674
- Nguyen DP, Wilson MA, Brown EN, Barbieri R. Measuring instantaneous frequency of local field potential oscillations using the Kalman smoother. *J Neurosci Methods* 2009 Nov 15;184(2):365-74. Epub 2009 Aug 21. PubMed PMID: 19699763. PubMed Central PMCID: PMC2767386.
- Chen Z, Brown E, Barbieri R. Characterizing nonlinear heartbeat dynamics within a point process framework. *IEEE Trans Biomed Eng*. 2010 Jun;57(6):1335-47. Epub 2010 Feb 17. PubMed PMID: 20172783. PubMed Central PMCID: PMC2952361.
- Chen Z, Putrino D, Ghosh S, Barbieri R, Brown E. Statistical inference for assessing functional connectivity of neuronal ensembles with sparse spiking data. *IEEE Trans Neural Syst Rehabil Eng*. 2011 Apr;19(2):121-35. Epub 2010 Oct 11. PubMed PMID: 20937583; PubMed Central PMCID: PMC3044782.
- Chen Z, Purdon PL, Harrell G, Pierce ET, Walsh J, Brown EN, Barbieri R. Dynamic assessment of baroreflex control of heart rate during induction of propofol anesthesia using a point process method. *Ann Biomed Eng*. 2011 Jan;39(1):260-76. Epub 2010 Oct 13. PubMed PMID: 20945159. PubMed Central PMCID: PMC3010293.
- Wyller VB, Barbieri R, Saul JP. Blood pressure variability and closed-loop baroreflex assessment in adolescent chronic fatigue syndrome during supine rest and orthostatic stress. *Eur J Appl Physiol*. 2011 Mar;111(3):497-507. Epub 2010 Oct 2. PubMed PMID: 20890710. PubMed Central PMCID: PMC3037975.
- LaCount LT, Barbieri R, Park K, Kim J, Brown EN, Kuo B, Napadow V. Static and dynamic autonomic response with increasing nausea perception. *Aviat Space Environ Med*. 2011 Apr; 82(4): 424-33. PubMed PMID: 21485400. PubMed Central PMCID: PMC3137518.
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- Chen Z, Purdon PL, Brown EN, Barbieri R. A Unified point process probabilistic framework to assess heartbeat dynamics and autonomic cardiovascular control. *Frontiers in Computational Physiology and Medicine*. 2012; DOI: 10.3389/fphys.2012.00004. PMID:22375120. PMCID: PMC3269663.
- Citi L, Brown EN, Barbieri R. A real-time automated point-process method for the detection and correction of erroneous and ectopic heartbeats. *IEEE Trans Biomed Eng*. 2012 Oct;59(10):2828-37. Epub 2012 Aug 2. PubMed PMID: 22875239; PubMed Central PMCID: PMC3523127.
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- Valenza G, Citi L, Scilingo EP, Barbieri R. Point-process nonlinear models with Laguerre and Volterra expansions: instantaneous assessment of heartbeat dynamics. *IEEE Transactions on Signal Processing* 2013. 61(11).
- Onorati F, Barbieri R, Mauri M, Russo V, Mainardi L. Characterization of affective states by pupillary dynamics and autonomic correlates. *Front Neuroeng*. 2013 Nov 6;6:9. doi: 10.3389/fneng.2013.00009. PubMed PMID:24223553; PubMed Central PMCID: PMC3818468.
- Citi L, Ba D, Brown EN, Barbieri R. Likelihood Methods for Point Processes with Refractoriness. *Neural Computation*. 2014 Feb;26(2):237-63. doi: 10.1162/NECO_a_00548. Epub 2013 Nov 8. PMID: 24206384.
- Valenza G, Citi L, Lanata' A, Scilingo EP, Barbieri R. Revealing real-time emotional responses: A personalized assessment based on heartbeat dynamics. *Nature: Sci Rep*. 2014 May 21;4:4998. doi: 10.1038/srep04998. PMID: 24845973. PMCID: PMC4028901.

- Valenza G, Citi L, Gentili C, Lanata' A, Scilingo EP, Barbieri R. Point-process Nonlinear Autonomic Assessment of Depressive States in Bipolar Patients. *Methods Inf Med.* 2014 Aug 11;53(4):296-302. doi: 10.3414/ME13-02-0036. Epub 2014 Jun 27. PMID: 24970591
- Sclocco R, Kim J, Garcia RG, Sheehan JD, Beissner F, Bianchi AM, Cerutti S, Napadow V, Barbieri R. Brain Circuitry Supporting Multi-Organ Autonomic Outflow in Response to Nausea. *Cerebral Cortex* 2014; doi: 10.1093/cercor/bhu172. PMID: 25115821.
- Valenza G, Citi L, Barbieri R. Estimation of Instantaneous Complex Dynamics through Lyapunov Exponents: A Study on Heartbeat Dynamics. *PLoS One.* 2014 Aug 29;9(8):e105622. doi: 10.1371/journal.pone.0105622. e. PMID: 25170911. PMCID: PMC4149483.
- Valenza G, Citi L, Scilingo EP, Barbieri R. Inhomogeneous point-process entropy: An instantaneous measure of complexity in discrete systems. *Physical Review E* 2014 May 9; 89, 052803. DOI: <http://dx.doi.org/10.1103/PhysRevE.89.052803>. PMID: 25353840.
- Valenza G, Oluwaseun Akeju, Pavone KJ, Citi L, Hartnack KE, Sampson A, Purdon PL, Brown EN, Barbieri R. Instantaneous monitoring of heart beat dynamics during anesthesia and sedation. *Journal of Computational Surgery.* 2014 3:13. DOI: 10.1186/s40244-014-0013-2.
- Valenza G, Citi L, Gentili C, Lanata' A, Scilingo EP, Barbieri R. Characterization of Depressive States in Bipolar Patients using Wearable Textile Technology and Instantaneous Heart Rate Variability Assessment. *IEEE Journal of Biomedical and Health Informatics.* 2015 Jan;19(1):263-74. doi: 10.1109/JBHI.2014.2307584. PMID: 25561449.
- Valenza G, Garcia R, Citi L, Scilingo EP, Tomaz C, Barbieri R. Nonlinear digital signal processing in mental health: characterization of major depression using instantaneous entropy measures of heartbeat dynamics. *Front. Physiol.*, 13 March 2015 | doi: 10.3389/fphys.2015.00074
- Kim J, Loggia ML, Cahalan CM, Harris RE, Beissner F, Garcia RG, Kim H, Barbieri R, Wasan AD, Edwards RR, Napadow V. The somatosensory link in fibromyalgia: functional connectivity of the primary somatosensory cortex is altered by sustained pain and is associated with clinical/autonomic dysfunction. *Arthritis Rheumatol.* 2015 May;67(5):1395-405. doi: 10.1002/art.39043. PMID: 25622796.
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- Onorati, F., Mainardi, L.T., Sirca, F., Russo, V., Barbieri, R. Nonlinear analysis of pupillary dynamics. *Biomedizinische Technik*, 2016 61 (1), pp. 95-106. DOI: 10.1515/bmt-2015-0027. (Epub 2015 Aug 6. pii: [fj/bmte.ahead-of-print/bmt-2015-0027/bmt-2015-0027.xml](http://dx.doi.org/10.1515/bmt-2015-0027).) PMID: 26351899.
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- Valenza, G., Toschi, N., Barbieri, R. Uncovering brain-heart information through advanced signal and image processing. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences.* 2016 374 (2067), DOI: 10.1098/rsta.2016.0020. PMID: 27044995. PMCID: PMC4822450.
- Sclocco, R., Beissner, F., Desbordes, G., Polimeni, J.R., Wald, L.L., Kettner, N.W., Kim, J., Garcia, R.G., Renvall, V., Bianchi, A.M., Cerutti, S., Napadow, V., Barbieri, R. Neuroimaging brainstem circuitry supporting cardiovagal response to pain: A combined heart rate variability/ultra-high-field (7 T) functional magnetic resonance imaging study. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences.* 2016 374 (2067), DOI: 10.1098/rsta.2015.0189. PMID: 27044996.
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- Gee AH, Barbieri R, Paydarfar D, Indic P. Predicting Bradycardia in Preterm Infants Using Point Process Analysis of Heart Rate. *IEEE Trans Biomed Eng.* 2016 Nov 24. [Epub ahead of print] PMID: 27898379

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- Garcia RG, Lin RL, Lee J, Kim J, Barbieri R, Sclocco R, Wasan AD, Edwards RR, Rosen BR, Hadjikhani N, Napadow V. Modulation of brainstem activity and connectivity by respiratory-gated auricular vagal afferent nerve stimulation in migraine patients. *Pain*. 2017 Aug;158(8):1461-1472. doi: 10.1097/j.pain.0000000000000930. PMID: 28541256
- Valenza G, Faes L, Citi L, Orini M, Barbieri R. Instantaneous Transfer Entropy for the Study of Cardiovascular and Cardio-Respiratory Nonstationary Dynamics. *IEEE Trans Biomed Eng*. 2017 Aug 15. doi: 10.1109/TBME.2017.2740259. [Epub ahead of print] PMID:28816654
- Coelli S, Barbieri R, Reni G, Zucca C, Bianchi AM. EEG indices correlate with sustained attention performance in patients affected by diffuse axonal injury. *Med Biol Eng Comput*. 2017 Nov 9. doi: 10.1007/s11517-017-1744-5. [Epub ahead of print] PMID:29124529
- Valenza G, Citi L, Saul JP, Barbieri R. Measures of Sympathetic and Parasympathetic Autonomic Outflow from Heartbeat Dynamics. *J Appl Physiol (1985)*. 2018 Feb 15. doi: 10.1152/jappphysiol.00842.2017. [Epub ahead of print] PMID: 29446712

Titoli ¹

- **Titoli Affiliazioni Correnti**
 (2015 – pres.) Affiliate Biomedical Engineer, Dept of Anesthesia, Critical Care and Pain Medicine, Massachusetts General Hospital, Boston, MA, USA
 (2006 – pres.) Research Affiliate, Dept of Brain and Cognitive Sciences, Massachusetts Institute of Technology, MA, USA
 (2008 - pres.) Affiliate Faculty, Martinos Center Mass. General Hospital, Boston, MA, USA
- **Titoli Accademici e Affiliazioni Progressi**
 (2007- 2015) Assistant Professor of Anaesthesia, Harvard Medical School, Boston, MA, USA
 (2007-2015) Assistant Biomedical Engineer, Dept of Anesthesia, Critical Care and Pain Medicine, Massachusetts General Hospital, Boston, MA, USA
 (2012 - 2015) Visiting Faculty Wyss Institute Harvard University, Boston, MA
- **Postdoctoral Training**
 (1998) Methods in Computational Neuroscience Summer Course, Marine Biological Laboratory, Woods Hole, MA
 (1998-2000) Research Fellow. Neural Information Encoding, Neuroscience, Institution: Massachusetts General Hospital- Harvard Medical School. Advisor: Emery N Brown, PhD, MD
- **Posizioni Pregarate**
 (1994-1997) Research Assistant Dept of Engineering Boston University, Boston, MA
 (1997-1998) Post-Doctoral Fellow Dept of Cardiology Harvard Medical School, MA
 (1997-1998) Research Fellow Dept of Cardiology Children's Hospital, Boston, MA
 (1998-2000) Research Fellow Dept of Anesthesia and C.C. Harvard Medical School, Boston, MA
 (1998-2000) Research Fellow Dept of Anesthesia and C.C. Mass. General Hospital, Boston, MA
 (2000-2007) Instructor Dept of Anesthesia and C.C. Harvard Medical School, Boston, MA
 (2000-2007) Assistant in Biomedical Engineering DACC Mass. General Hospital, Boston, MA
- **Altre Posizioni Professionali**
 (2010-2015) Visiting Professor Dept of Electrical Engineering Instituto Tecnológico de Buenos Aires
 (2013-2015) Visiting Professor Dept of Biomedicine University of Rome "Tor Vergata"
 (2014-2016) Associate Professor in Bioengineering Italian National Scientific Qualification
 (2016-pres.) Professor in Bioengineering Italian National Scientific Qualification

¹ In via esemplificativa sono indicate alcune voci

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- Responsabilità scientifica generale o di unità (work package, unità nazionale nei progetti europei o locale in quelli nazionali ecc.) per progetti di ricerca internazionali e nazionali ammessi al finanziamento sulla base di bandi competitivi che prevedano la revisione tra pari:
 - 2018-2019, MIT-Italy MISTI Grant
 - Principal Investigators : Riccardo Barbieri (POLIMI) and Pawan Sinha (MIT)
 - " Sensory Habituation in Autism Spectrum Disorders"
 - USD 15,000.
 -
 - 2017-2018, MIT-Italy MISTI Grant
 - Principal Investigators : Riccardo Barbieri (POLIMI) and Roger Mark (MIT)
 - " Characterizing Hypotensive Episodes in the Intensive Care Unit"
 - USD 15,000.
 -
 - 2016-2018, American Heart Association
 - Principal Investigator, Grant: "Grant-in-Aid Award"
 - "Effects of Transcutaneous Nerve Stimulation on Hypertension"
 - USD 198,000.
 -
 - 2015-2017, University of Rome "Tor Vergata"
 - Co-Principal Investigator, Grant: "Joint Chairs 2014"
 - "Joint dynamical Heart Rate Variability and resting state fMRI analysis: a new tool to investigate central correlates of ANS dysfunction in Parkinson's Disease" (with Prof. Nicola Toschi, University of Rome "Tor Vergata").
 - EUR 17000
 -
 - 2014-2015, DARPA
 - Investigator
 - "Multi-Resolution Hierarchical Brain Network Modeling Aim4 – DECODE" (with Dr. Emad Eskandar, MGH)
 -
 - 2014-2015, Massachusetts General Hospital
 - Principal Investigator Grant: MGH-ECOR Interim Support Fund
 - "Characterization of Dynamic Autonomic Signatures of Sedation and Nociception",
 - USD 75,000
 -
 - 2013-2014, Mind and Life Institute
 - Principal Investigator, Grant: Francisco J. Varela Res. Award
 - "A Longitudinal Training Study to Delineate the Specific Causal Effects of Open Monitoring Versus Focused Attention Techniques on Emotional Regulation Skills"
 - USD 15,000
 -
 - 2012-2014, Massachusetts General Hospital
 - Principal Investigator, Grant: MGH-ECOR Interim Support Fund
 - "Multivariate Point Process Models of Human Cardiovascular Control Dynamics"
 - USD 50,000
 -
 - 2012-2014, Brigham and Women's hospital
 - Co-Investigator, Grant: BWH/Brain & Behavior Research Foundation
 - "Evaluation of Yoga Practice on Cardiovascular and Autonomic Health for Sleep Disturbances in Post-Traumatic Stress Disorder (PTSD)" (with Dr. Jessica Noggle, BWH)
 -
 - 2012-2014, National Institutes of Health
 - Co- Investigator, Grant: NIDDK R21DK097499
 - "Brain Mechanisms for Autonomic Outflow and Nausea in Cyclic Vomiting Syndrome" (with Drs. Braden Kuo and Vitaly Napadow, MGH)
 -
 - 2007-2013, National Institutes of Health
 - Principal Investigator, Grant: NHLBI R01HL084502
 - "Point Process Models of Human Heart Beat Interval Dynamics"
 - USD 1,250,000
 -
 - 2008-2009, Massachusetts General Hospital

- Principal Investigator , Grant: CIMIT Science Award
- "A Computational Tool Based on Heart Beat Dynamics to Predict Apnea Episodes in Premature Infants"
- USD 40,000
-
- 2004-2009, National Institutes of Health
- Co-Investigator, Grant: NIMH R01MH59733
- "Statistical Analysis of Hippocampal Information Encoding" (with Dr. Emery N Brown, MGH)
- Direzione o partecipazione a comitati di direzione di riviste Scopus/WOS o classificate da ANVUR, nonché di collane editoriali, enciclopedie e trattati di riconosciuto prestigio nel settore:

- 1998-pres. IEEE -Transactions on BioMedical Engineering
- 2003-pres. Institute of Physics
- 2004-pres. Journal of Computational Neuroscience
- 2005-pres. IEEE - Transaction on NSRE
- 2005-pres. Wiley Encyclopedia of Biomed. Eng.
- 2006-pres. J. of Neuroeng. and Rehab..
- 2007-pres. Computer Methods and Programs in Biomedicine
- 2007-pres. Physica A
- 2007-pres. Journal of Neuroscience Methods
- 2008-pres. Neural Computation
- 2009-pres. IEEE - Transactions on Information Technology in BioMedicine
- 2009-pres. Annals of Biomedical Engineering
- 2010-pres. PLoS ONE
- 2011-pres. Frontiers in Fractal Physiology
- 2012-pres. American Journal of Physiology
- 2012-pres. Physiology & Behavior
- 2012-pres. Medical & Biological Eng & Computing
- 2012-pres. Journal of Clinical Monitoring and Computing
- 2013-pres. Journal of Computational Surgery
- 2013-pres. Methods of Information in Medicine

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- Incarichi di insegnamento o di ricerca (fellowship) presso qualificati atenei e istituti di ricerca esteri o sovranazionali:

- • Dates (from – to) 2015 – present
- • Name and address of employer Massachusetts General Hospital
- • Type of business or sector Dept. of Anesthesia, Critical Care and Pain Medicine
- • Occupation or position held Affiliate Biomedical Engineer
- • Main activities and responsibilities

- • Dates (from – to) 2006 – present
- • Name and address of employer Massachusetts Institute of Technology
- • Type of business or sector Dept. of Brain and Cognitive Sciences
- • Occupation or position held Affiliate Research Faculty
- • Main activities and responsibilities Academic Position

- • Dates (from – to) 2007 – 2015
- • Name and address of employer Harvard Medical School
- • Type of business or sector Dept. of Anesthesia, Critical Care and Pain Medicine
- • Occupation or position held Assistant Professor
- • Main activities and responsibilities Academic Position

- • Dates (from – to) 2000 – 2015
- • Name and address of employer Massachusetts General Hospital
- • Type of business or sector Dept. of Anesthesia, Critical Care and Pain Medicine
- • Occupation or position held Assistant Biomedical Engineer
- • Main activities and responsibilities

- • Dates (from – to) 2000 – 2007
- • Name and address of employer Harvard Medical School
- • Type of business or sector Dept. of Anesthesia, Critical Care and Pain Medicine

(2013 - pres.) Scientific Committee of the 8th Workshop of the European Study Group on Cardiovascular Oscillations.

- Conseguimento di premi e riconoscimenti per l'attività scientifica
 - (2008) Senior Member IEEE
 - (2009) Citizenship Award. Department of Anesthesia, Critical Care and Pain Medicine, MGH
 - (2009) Partners in Excellence Award. Massachusetts General Physician Organization, MGH, Partners HealthCare.
 - (2010) Keynote Speaker. 32nd Annual IEEE-EMBS Conference, Buenos Aires, Argenti
 - (2012) Winner of the 2012 Physionet/Computing in Cardiology Challenge
- partecipazione come relatore a convegni di carattere scientifico nazionali o internazionali:
 - (1999-pres.) Invited to more than 100 Regional, National and International Presentations and Courses
- direzione o partecipazione a gruppi di ricerca, nazionali o internazionali, legati a università ovvero a qualificate istituzioni pubbliche o private:
 -
- partecipazione a comitati di redazione di riviste Scopus/WOS o classificate da ANVUR, nonché di collane editoriali, enciclopedie e trattati di riconosciuto prestigio nel settore:
 -
- Brevetti/Patents
 - (2006) "Realtime Monitoring and Analysis of Heart-Beat Dynamics". Patent Pending US application # 11/209,195 (MGH 2336) Pub. # US 2006/0089559 Pub. Date Apr 27, 2006: ABANDONED
 - (2012) "Systems and Methods for Inhibiting Apneic Events". Patent Pending US application (Provisional Application Serial No.61/528,994, Practitioner's Docket No. 002806-071541-PCT). Submitted Aug 31, 2012
 - (2018) "System and Method for Sympathetic and Parasympathetic Activity Monitoring by Heartbeat". Patent Pending US application (International Application No. PCT/US2016/044844, Attorney Docket No. 125141.02886.MGH23346). International Filing Date July 29, 2016
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