

# List of Academic Publications

## Leonardo Gabrielli

Last updated: Dec 2019

### BOOKS AND BOOK CHAPTERS

- 2020 Developing Virtual Synthesizers with VCV Rack** (Leonardo Gabrielli), Focal Press, 269 pp. More information online at [Routledge.com](http://Routledge.com).
- 2019 Neural Beamforming for Speech Enhancement: Preliminary Results** (Tomassetti Stefano, Leonardo Gabrielli, Emanuele Principi, Daniele Ferretti and Stefano Squartini), Chapter in: *Neural Advances in Processing Nonlinear Dynamic Signals*, Springer International Publishing, pp. 37-47, 2019.
- 2016 Wireless Networked Music Performance** (Leonardo Gabrielli and Stefano Squartini), Springer, 2016.
- 2015 Domestic Water and Natural Gas Demand Forecasting by Using Heterogeneous Data: A Preliminary Study** (Marco Fagiani, Stefano Squartini, Leonardo Gabrielli, Susanna Spinsante and Francesco Piazza), Chapter in: *Advances in Neural Networks: Computational and Theoretical Issues*, Springer International Publishing, pp. 185-194, 2015.

### PEER-REVIEWED JOURNAL PAPERS

- 2019 A Multi-Stage Algorithm for Acoustic Physical Model Parameters Estimation** (Leonardo Gabrielli, Stefano Tomassetti, Stefano Squartini, Carlo Zinato and Stefano Guaiana), *In IEEE Transactions on Audio, Speech and Language processing*, volume 27, pp. 1229-1240, 2019.
- 2019 Polyphonic Sound Event Detection by using Capsule Neural Networks** (F. Vesperini and L. Gabrielli and E. Principi and S. Squartini), *In IEEE Journal of Selected Topics in Signal Processing*, volume 13, pp. 310-322, 2019.
- 2018 End-to-End Learning for Physics-Based Acoustic Modeling** (L. Gabrielli, S. Tomassetti, C. Zinato and F. Piazza), *In IEEE Transactions on Emerging Topics in Computational Intelligence*, volume 2, pp. 160-170, 2018.
- 2016 A Statistical Framework for Automatic Leakage Detection in Smart Water and Gas Grids** (Marco Fagiani, Stefano Squartini, Leonardo Gabrielli, Marco Severini and Francesco Piazza), *In Energies*, Multidisciplinary Digital Publishing Institute, volume 9, pp. 665, 2016.
- 2015 A review of datasets and load forecasting techniques for smart natural gas and water grids: Analysis and experiments** (Marco Fagiani, Stefano Squartini, Leonardo Gabrielli, Susanna Spinsante and Francesco Piazza), *In Neurocomputing*, Elsevier, volume 170, pp. 448-465, 2015.
- 2014 Wireless M-Bus Sensor Networks for Smart Water Grids: Analysis and Results** (Susanna Spinsante, Stefano Squartini, Leonardo Gabrielli, Mirco Pizzichini, Ennio Gambi, Francesco Piazza), *In International Journal of Distributed Sensor Networks*, volume 2014, pp. 16, 2014.
- 2013 A digital waveguide-based approach for Clavinet modeling and synthesis** (Leonardo Gabrielli, Vesa Välimäki, Henri Penttinen, Stefano Squartini, Stefan Bilbao), *In EURASIP Journal on Advances in Signal Processing*, Springer, volume 2013, pp. 103, 2013.
- 2013 A Real-Time Dual-Channel Speech Reinforcement System for Intra-Cabin Communication** (Francesco Faccenda, Stefano Squartini, Emanuele Principi, Leonardo Gabrielli, Francesco Piazza), *In J. Audio Eng. Soc.*, volume 61, pp. 889-910, 2013.
- 2012 Self-powered Sensor Networks for Water Grids: Challenges and Preliminary Evaluations** (Matteo Mencarelli, Mirco Pizzichini, Leonardo Gabrielli, Susanna Spinsante, Stefano Squartini), *In Journal of Selected Areas in Telecommunications*, volume October edition, 2012.

**2011 Adaptive linear prediction filtering in DWT domain for real-time musical onset detection** (L. Gabrielli, F. Piazza, S. Squartini), *In EURASIP Journal on Advances in Signal Processing*, volume 2011, 2011.

#### INVITED TALKS, KEYNOTES AND LECTURES

**2019 From Le Marche to MARS: a journey through accordions, synthesizers and computer music** (L. Gabrielli), *invited keynote at the International CSound Conference (ICSC), September 2019, Cagliari, Italy*

**2018 Rima Glottidis: Experimenting Generative Raw Audio Synthesis for a Sound Installation** (L. Gabrielli), *invited lecture at the XXII Colloquium of Musical Informatics (CIM), November 2018, Udine, Italy*

**2017 The recent shift in Machine Hearing: from Engineered Features to Time-Domain Raw Audio Processing** (L. Gabrielli), *invited lecture at the 8th International Temporal Design Symposium, September 2017, Bologna, Italy*

**2015 La famiglia IEEE 802.11 per la musica Live** (L. Gabrielli), *invited talk at the technical symposium "Senza Fili" with the patronage of the Italian section of the Audio Engineering Society, November 2015, Milan, Italy*

**2015 WeMUST: novel opportunities for networked performance** (L. Gabrielli), *invited talk at the Music Tech Fest, September 2015, Ljubljana, Slovenia*

#### CONFERENCE PAPERS

**2019 Processing Acoustic Data with Siamese Neural Networks for Enhanced Road Roughness Classification** (L. Gabrielli, L. Ambrosini, F. Vesperini, V. Bruschi, S. Squartini and L. Cattani), *In 2019 International Joint Conference on Neural Networks (IJCNN)*, pp. 1-7, 2019.

**2019 Towards the Design of a Machine Learning-based Consumer Healthcare Platform powered by Electronic Health Records and measurement of Lifestyle through Smartphone Data** (A. Ferri, R. Rosati, M. Bernardini, L. Gabrielli, S. Casaccia, L. Romeo, A. Monteriù, E. Frontoni), *In 23rd IEEE International Symposium on Consumer Technologies (ISCT)*, pp. 37-40, 2019.

**2019 Detecting Road Surface Wetness Using Microphones and Convolutional Neural Networks** (G. Pepe, L. Gabrielli, L. Ambrosini, S. Squartini and L. Cattani), *In Audio Engineering Society Convention 146*, 2019.

**2018 Snore Sounds Excitation Localization by Using Scattering Transform and Deep Neural Networks** (F. Vesperini and A. Galli and L. Gabrielli and E. Principi), *In 2018 International Joint Conference on Neural Networks (IJCNN)*, volume , pp. 1-8, 2018.

**2018 Hierarchic Conv Nets Framework for Rare Sound Event Detection** (F. Vesperini and D. Droghini and E. Principi and L. Gabrielli), *In 2018 26th European Signal Processing Conference (EUSIPCO)*, volume , pp. 1497-1501, 2018.

**2018 Deep Learning for Timbre Modification and Transfer: An Evaluation Study** (Leonardo Gabrielli, Carmine Emanuele Cella, Fabio Vesperini, Diego Droghini, Emanuele Principi and Stefano Squartini), *In Audio Engineering Society Convention 144*, 2018.

**2018 Deep Neural Networks for Road Surface Roughness Classification from Acoustic Signals** (Livio Ambrosini, Leonardo Gabrielli, Fabio Vesperini, Stefano Squartini and Luca Cattani), *In Audio Engineering Society Convention 144*, 2018.

**2017 Introducing Deep Machine Learning for Parameter Estimation in Physical Modelling** (Leonardo Gabrielli, Stefano Tomassetti, Carlo Zinato and Stefano Squartini), *In Digital Audio Effects (DAFX), 2017*.

**2015 Parallel digital signal processing for efficient piano synthesis** (Leonardo Gabrielli, Stefano Zambon and Federico Fontana), *In Signal Processing Conference (EUSIPCO), 2015 23rd European*, pp. 2019-2022, 2015.

- 2015 Clock Skew Compensation by Adaptive Resampling for Audio Networking** (Leonardo Gabrielli, Michele Bussolotto, Stefano Squartini and Fons Adriaensen), *In Audio Engineering Society Convention 138*, 2015.
- 2014 A Nonlinear Second-Order Digital Oscillator for Virtual Acoustic Feedback** (Leonardo Gabrielli, Marco Giobbi, Stefano Squartini, Vesa Välimäki), *In ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing*, 2014.
- 2014 Adaptive Digital Oscillator for Virtual Acoustic Feedback** (Leonardo Gabrielli, Marco Giobbi, Stefano Squartini, Vesa Välimäki), *In Audio Engineering Society 136th Convention*, 2014.
- 2014 Multi-resolution Linear Prediction Based Features for Audio Onset Detection with Bidirectional LSTM Neural Networks** (Erik Marchi, Giacomo Ferroni, Florian Eyben, Leonardo Gabrielli, Stefano Squartini, Bjorn Schuller), *In ICASSP, IEEE International Conference on Acoustics, Speech and Signal Processing*, 2014.
- 2013 Wireless M-Bus sensor nodes in smart water grids: The energy issue** (S. Squartini, L. Gabrielli, M. Mencarelli, M. Pizzichini, S. Spinsante, F. Piazza), *In Intelligent Control and Information Processing (ICICIP), 2013 Fourth International Conference on*, pp. 614-619, 2013.
- 2013 Advancements and Performance Analysis on the Wireless Music Studio (WeMUST) framework** (Leonardo Gabrielli, Stefano Squartini, Francesco Piazza), *In AES 134th Convention*, 2013.
- 2013 A Finite Difference Method for the Excitation of a Digital Waveguide String Model** (Leonardo Gabrielli, Luca Remaggi, Stefano Squartini, Vesa Välimäki), *In AES 134th Convention*, 2013.
- 2013 Expressive Physical Modeling of Keyboard Instruments: From Theory to Implementation** (Stefano Zambon, Leonardo Gabrielli, Balazs Bank), *In Audio Engineering Society Convention 134*, 2013.
- 2013 Onset Detection Exploiting Adaptive Linear Prediction Filtering in DWT Domain with Bidirectional Long Short-Term Memory Neural Networks** (Giacomo Ferroni, Erik Marchi, Florian Eyben, Leonardo Gabrielli, Stefano Squartini, Björn Schuller), *In ISMIR 2013, Annual Meeting of the MIREX 2013 community as part of the 14th International Conference on Music Information Retrieval*, 2013.
- 2013 An Embedded-Processor Driven Test Bench for Acoustic Feedback Cancellation in Real Environments** (Francesco Faccenda, Stefano Squartini, Emanuele Principi, Leonardo Gabrielli, Francesco Piazza), *In Audio Engineering Society Convention 134*, 2013.
- 2012 Towards a portable wireless platform for networked performance** (Leonardo Gabrielli, Stefano Squartini, Francesco Piazza), *In Colloqui Informatica Musicale (CIM), Trieste*, 2012.
- 2012 Networked Beagleboards for Wireless Music Applications** (L. Gabrielli, S. Squartini, E. Principi, F. Piazza), *In EDERC 2012*, 2012.
- 2012 Streaming audio Real-Time per applicazioni musicali sulla piattaforma BeagleBoardTowards** (Leonardo Gabrielli, Stefano Squartini, Emanuele Principi, Francesco Piazza), *In Conferenza sul Software Libero (ConfSL), Ancona*, 2012.
- 2012 A pickup model for the Clavinet** (L. Remaggi, L. Gabrielli, R.C. de Paiva, V. Välimäki, S. Squartini), *In DAFX-2012 (Digital Audio Effects), York, UK*, 2012.
- 2012 The Yin Yang Theory in Sound and Music: a First Exploration** (L. Gabrielli, D. Gabrielli), *In International Computer Music Conference*, 2012.
- 2012 Ibrida: A New DWT-Domain Sound Hybridization Tool** (L. Gabrielli, S. Squartini), *In 45th AES International Conference*, 2012.
- 2011 Real-time emulation of the Clavinet** (L. Gabrielli, V. Välimäki, S. Bilbao), *In International Computer Music Conference*, 2011.
- 2011 A Subjective Validation Method for Musical Instrument Emulation** (L. Gabrielli, S. Squartini, V. Välimäki), *In 131st Audio Eng. Soc. Convention, New York*, 2011.

MISCELLANEA AND CORRESPONDENCE

**2017 Once Again** (Leonardo Gabrielli), letter to the Computer Music Journal, vol 41(3), Fall 2017.