Curriculum
of teaching and scientific activity

Federico Fontana

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Contents

1 Personal data

Name	Federico Fontana
birth place	Pordenone
date of birth	May 28, 1969
address	via Villa Scura 28, Porcia (PN) 33080, Italy
e-mail	federico.fontana@uniud.it
Position	Associate professor since 2014 at the Department of Mathematics, Computer Science and Physics, University of Udine, Italy
National ASN	Full, national sector INF/01 - Computer science
	Full, national sector ING-INF/05 - Information engineering
PhD	in Computer Science, University of Verona, Italy (2003)
Degree	in Electronic Engineering (field: Computer Science), University of Padua, Italy (1996)

2 Professional Distinctions

- 2022-25: Associate researcher at the Zurich University of the Arts, Zurich, Switzerland.

- 2022-25: Senior Area Editor of the IEEE/ACM Transactions on Audio, Speech, and Language Processing.

- 2021-24: Coordinator of the PhD in Computer Science and Artificial Intelligence, University of Udine, Italy.

- 2008-11: Coordinator of the FET-Open EU Project 222107 *NIW - Natural Interactive Walking.*

3 Employment record

2010-2013	Assistant professor at the Department of Mathematics, Computer Science and Physics of the University of Udine, Italy
2005-2009	Assistant professor at the Department of Computer Science of the University of Verona, Italy
2004-2005	Post-doc researcher at the Department of Computer Science of the University of Verona, Italy
2003	Post-doc researcher at the Department of Information Engineering of the University of Padua, Italy
2001	Research grant from the Department of Signal Processing and Acoustics at Aalto University, Espoo, Finland
2000-2002	Ph.D. student in Computer science at the Department of Computer Science of the University of Verona, Italy
1998-2003	Independent R&D consultant
	Research grants from the Department of Information Engineering of the University of Padua, Italy
1996	Process, Acoustics & Vibration Engineer at Electrolux Compressors S.A., Barcelona, Spain

4   Affiliations

- IEEE Senior Member

- Associate researcher at the Zurich University of the Arts, Zurich, Switzerland, 2022-2025.

- AIMI (Associazione Informatica Musicale Italiana) Member, Secretary 2015-2022.

5   Research interests

A short synopsis of the present and past *research interests* is provided, along with pointers to related personal publications.

1995-today *Sound and Music computing* [64, 1, 67, 17, 11, 22, 68, 70, 69, 71, 72, 73, 23, 25, 12, 26, 27, 14, 29, 30, 80, 81, 82, 84, 31, 85, 32, 86, 33, 34, 87, 88, 89, 90, 91, 92, 93, 94, 36, 95, 97, 39, 40, 15, 41, 42, 45, 46, 51, 54, 118, 123, 128, 116, 52, 53, 99, 117, 137, 145, 55, 142, 143] deals with the analysis, synthesis, manipulation and evaluation of audio and musical information. This field is constantly vitalized by the modeling and design of interactive systems for applications of multi-modal (especially auditory and tactile) augmented reality, in which real-time feedback control is instantaneously and continuously informed by users' gestures, manipulation, intentions, and even affective characters. In this context, the design of non visual displays capable of supporting our tasks and seamlessly enriching the perception of our surroundings is a complex process, involving knowledge ranging across the psychology and ecology of hearing up to the user-centered, especially *Sonic interaction design* [16, 65, 63, 66, 18, 19, 7, 56, 20, 21, 24, 7, 74, 28, 75, 76, 77, 78, 79, 2, 57, 58, 83, 35, 37, 38, 59, 96, 4, 3, 100, 101, 102, 103, 5, 104, 105, 106, 43, 44, 109, 110, 111, 112, 113, 114, 115, 6, 121, 122, 132, 133, 135, 140]. Products of this research activity include both hardware and software models as well as physical prototypes of interface components, covering issues of user's data acquisition up to the acoustic and tactile rendering and evaluation of non visual information.

2003-2006 *Biosignal processing* [47, 48, 49, 50, 120, 60, 124, 125, 127]. Signal transduction networks are traditionally modeled in the continuous domain, via nonlinear differential equation systems. Alternative methodologies have been investigated as well, which work in the symbolic domain. Membrane computing is one of these alternative methodologies: by means of its generative tools, interesting observations can be made about the nature and behavior of sophisticate genomic signals such as those governing circadian cycles.

1998-2003 *DSP software* [8, 9, 10] design and engineering of real-time signal processing algorithms for the synthesis, equalization and spatialization of piano sounds onboard marketed digital piano keyboards. Moreover, a digital signal processing algorithm of the known "Dolby B" noise suppressor, that was successfully employed in some widely marketed digital car radios.

6   Teaching

- 2024: PhD Course entitled *Three pillars of computer science: running a program, formalizing an algorithm, assessing complexity*, Transversal teaching initiative for PhD students at the University of Udine, Italy, February 19-23, 2024 (10 hours, with A. Dovier and A. Policriti).

- 2023-24: Laboratory of the Digital, Bachelor in Digital Phylosophy and Transformation, University of Udine, Italy (12 ECTS, with F. Buttussi and M. Franceschet).

- 2018-24: Course on Computer architectures, Bachelor in Computer Science, University of Udine, Italy (12 ECTS).

- 2017-24: Course on Auditory and tactile interactions, Master in Computer Science, University of Udine, Italy (6 ECTS).

- 2022: ERASMUS+/KA1 STA Course entitled *Efficiency vs. complexity of sound algorithms*, Master in *Sound and Music Computing*, Aalborg University Copenhagen, Copenhagen, Denmark. May 2-6, 2022.

- 2022: PhD Course entitled *Big Data*, Transversal teaching initiative for PhD students at the University of Udine, Italy, February 21-24, 2022 (6 hours).

- 2021: PhD course entitled *Continuous vs. discrete signals*, PhD in Computer Science, Mathemathics and Physics, University of Udine, Italy, June 7-11, 2021 (8 hours).

- 2015-17: Course on Object-oriented programming, Bachelor in Computer Science, University of Udine, Italy (6 ECTS).

- 2011-17: Lectures on Computer networks, Bachelor in Computer Science, University of Udine, Italy (3 ECTS).

- 2011-16: Course on Sound processing, Master in Computer Science, University of Udine, Italy (6 ECTS).

- 2013: Course on Bio-electric signal processing at the Dept. Neurosciences of the University of Udine, Italy (3 ECTS).

- 2011: PhD course entitled *Interactive SMC: The Challenges of Continuous Interaction*, Sound and Music Computing (SMC) Summer School, University of Padua, Italy, July 2-5, 2011.

- 2011: PhD course entitled *Non Visual Interaction Design*, Institut de Recherche en Mathématiques et Informatique Appliquées, Université de la Réunion, France, January 24-28, 2011.

- 2010-11: Course on Non visual interaction, Master in Computer Science, University of Verona, Italy (6 ECTS).

- 2009: Course on Sound processing for the Master course in *Computer Game Development* at the Dipartimento di Informatica, University of Verona, Italy.

- 2009: Tutor at the Sound and Music Computing (SMC) Summer School, Casa da Musica, Porto, Portugal, July 18-21.

- 2009: Tutor of a PhD course entitled *Introduction to an environment for scientific calculation*, University of Verona, Italy.

- 2008-09: Course on Sound processing, Master in Computer Science, University of Verona, Italy (6 ECTS).

- 2006-08: Course on Object-based programming, Bachelor in Computer Science, University of Verona, Italy (9 ECTS).

- 2005-08: Course on Fundamentals of computer science, Bachelor in Computer Science, University of Verona, Italy (3 ECTS).

- 2007: Tutor at the Sound and Music Computing (SMC) Summer School, KTH Royal Institute of Technology, Stockholm, Sweden, July 2-6.

- 2005: Laboratory of Musical informatics at the Faculty of Literature of the University of Udine, Italy.

7 Coordination and participation in research projects

- 2023: Recipient of an Otto Mønsted Gæsteprofessorat three-month scholarship to be spent at Aalborg University Copenhagen during fall 2024 ($\sim$ 180K DKR).

- 2023-25: Local Investigator of the *PRIN 2022* project entitled *Sonic interaction design for children with auditory impairment (S-TWIN)*, funded by the Italian Ministry for the Research and University, and led by th University of Padua, Italy ($\sim$ 50 kEUR).

- 2022: Coordinator of the *Proof of Concept* project entitled *Mechaanical and Electronic Enhancement of a programmable knob invention*, funded by the University of Udine and participated by SpecialWaves srl – Pedrengo (BG), Italy ($\sim$ 10 kEUR).

- 2018-22: Foreign Scientific Collaborator in the national project *HAPTEEV - Haptic technology and evaluation for digital musical interfaces*, Zurich University of the Arts and ETH - Zürich, Switzerland.

- 2016: Recipient of the IZK0Z2_171102 International Short Visit entitled *Enduring international leadership of ZHdK in Musical Haptics*, funded by the Swiss National Science Foundation, and spent at the Institute for Computer Music and Sound Technology, Zurich University of the Arts in Switzerland ($\sim$ 5 kEUR).

- 2015: Coordinator of the Proof of Concept Network national project *Virtual piano system on a tablet pc* funded by the MIUR through the AREA Science Park in Trieste, Italy, participated by the University of Udine and Julia SRL, Italy, and co-financed by Viscount SpA through the University of Verona, Italy ($\sim$ 50 kEUR).

- 2014-16: Foreign Scientific Collaborator in the national project *AHMI - Audio-Haptic modalities in Musical Interfaces*, Zurich University of the Arts and ETH - Zürich, Switzerland.

- 2013: Secondary Investigator in the project *PiaNo - Piano from Nothing*, an ISRA Project for Intelligent Art Media between Tsinghua University - Beijing, China and Intel - Santa Clara, CA (pre-financed for 6 months; initiative discontinued by Intel).

- 2008-11: Coordinator of the FET-Open EU Project 222107 *NIW - Natural Interactive Walking* ($\sim$ 1 MEUR).

- 2008-11: Coordinator of the project *E-PHASE - Electronic Piano with Haptic And Spatial Enhancements*, a "Joint Project" between the University of Verona and Viscount SpA ($\sim$ 100 kEUR).

- 2008-10: Coordinator of the project *REVIVAL - Restauro dell'Archivio Vicentini di Verona e sua accessibilità come Audio e-Library*, a "Joint Project" between the University of Verona and Fondazione Arena di Verona ($\sim$ 100 kEUR).

- 2008-10: Research team coordinator of the European Foundation for the Study of Diabetes (EFSD)-Novartis project *Genetic Bases of β-Cell Role in Glucose Homeostasis of Patients With Type 2 Diabetes: A Computational Biomedicine Study*.

- 2006-09: Local coordinator from 2008 of the EU Project FP6-NEST-29085 *CLOSED - Closing the Loop Of Sound Evaluation and Design* under the path "Measuring the impossible".

- 2007-08: Coordinator of the project *Sound synthesis by physical models of the piano*, a "Joint Project" between the University of Verona and Viscount SpA ($\sim$ 100 kEUR).

- (2005-06): Team member in the national project COFIN 2004 *Symbolic models of cellular dynamics: biomolecular algorithms and membrane systems* funded by the Italian Ministry of University Research.

- 2004, 2005: Consultant for the EU Project IST IST-2-511316-IP *RACINE - IP* funded by the European Community in the ICT-EU research activity.

- 2003, 2004: Consultant for the EU Project IST 2001-37117 *RACINE - S* funded by the European Community in the ICT-EU research activity.

- 2001-03: Team member in the EU Project IST 2000-25287 *SOb – The Sounding Object* funded by the European Community in the IST *Future and Emerging Technologies* initiative.

- 2002: Team member in the national project *Augmented Reality for Teleoperation of Free Flying Robots*, funded by the Italian Space Agency.

8 Participation to editorial boards

- 2022-25: Senior Area Editor of the IEEE/ACM Transactions on Audio, Speech, and Language Processing.

- 2022-25: Associate Editor of the IEEE Signal Processing Letters.

- 2023: Guest co-editor of a Springer *EURASIP Journal of Audio, Speech and Music processing* special issue on "Directions of Digital Audio Effects".

- 2022: Guest co-editor of an AES *Journal of the Audio Engineering Society* special issue on "Audio Filter Design".

- 2017-21 Associate Editor of the IEEE/ACM Transactions on Audio, Speech, and Language Processing.

- 2020: Guest co-editor of an MDPI *Applied Sciences* special issue on "Digital Audio Effects".

- 2019: Guest co-editor of an Hindawi *Wireless Communications and Mobile Computing* special issue on "Interactions in Mobile Sound and Music Computing".

- 2011: Guest co-editor of an EURASIP *Journal on Advances in Signal Processing* special issue on "Musical Applications of Real-Time Signal Processing".

- 2010: Guest editor of an IEEE *Transactions on Audio, Speech and Language processing* special issue on "Virtual Analog Audio Effects and Musical Instruments".

9 Participation to conference chair committees

- 2023: Paper co-chair of the *International Conference on Digital Audio Effects* (DAFx-23), Aalborg University Copenhagen, Copenhagen.

- 2022: Doctoral Consortium co-chair of the *International Conference on New Interfaces for Musical Expression* (NIME2022), The University of Auckland, New Zealand.

- 2022: Scientific co-chair of the *23th Colloquium on Music Informatics* (XXIII CIM), Università Politecnica delle Marche, Ancona.

- 2018: General chair of the *22st Colloquium on Music Informatics* (XXII CIM), Conservatorio J. Tomadini, Udine, Italy.

- 2016: Scientific co-chair of the *21st Colloquium on Music Informatics* (XXI CIM), Conservatorio G.P. Da Palestrina, Cagliari, Italy.

- 2013: Co-chair of the special session entitled "Auditory and multimodal scene analysis" at the *40th Italian Annual Conference on Acoustics and 39th German Annual Conference on Acoustics* (AIA-DAGA), Merano, Italy.

- 2012: Scientific co-chair of the *19th Colloquium on Music Informatics* (XIX CIM), Conservatorio G. Tartini, Trieste, Italy.

- 2010: Scientific co-chair of the *Haptic and Auditory Interaction Design* (HAID2010) conference, Aalborg University in Copenhagen, Denmark.

- 2009: Session organizer at the *Eurographics - IT* conference, Dipartimento di Informatica, University of Verona.

10 Reviewing

- 2011: Project evaluator for the French *Agence Nationale de la Recherche*.

- 2008, 2010: Project evaluator for the Estonian Science Foundation.

- 2006, 2010: Book reviewer for the Engineering technology editorial team at John Wiley, UK.

- Reviewer for IEEE *Transactions on Human-Machine Systems*, Elsevier *Neuroscience*, the *Journal of the Audio Engineering Society*, *Journal of the Acoustical Society of America*, ACM *Transactions Applied Perception*, IEEE *Computer*, MDPI *Applied Sciences*, *HARTS&Minds*, IEEE *Signal Processing Magazine*, IEEE *Transactions on Signal Processing*, IEEE/ACM *Transactions on Audio, Speech, and Language Processing*, IEEE *Transactions on Systems, Man, and Cybernetics*, IEEE *MultiMedia*, IEEE *Transactions on Affective Computing*, IEEE *Signal Processing Letters*, Elsevier *Theoretical Computer Science*, Elsevier *BioSystems*, Elsevier *International Journal of Human-Computer Studies*, Elsevier *GENE*, EURASIP *Applied Signal Processing*, Hindawi *Mathematical problems in Engineering*, *Scandinavian Journal of Medicine & Science in Sports*, MDPI *Applied Sciences*, *Rivista Italiana di Acustica*.

- Reviewer for the *Sound and Music Computing Conference* (regularly), the *International Conference on Digital Audio Effects* (regularly), the *Conference on New Interfaces for Musical Expression* (regularly), the *Conference of the Audio Engineering Society* (regularly), the *Haptic and Audio Interaction Design Conference* (regularly), the *International Conference on Multimodal Interfaces* (regularly), the *ACM CHI Conference* (often), the *International Computer Music Conference* (often), the *IEEE International Workshop on Haptic Audio Visual Environments and Games* (occasionally), the *SIGCHI Conference* (2015), the *World Haptics Conference* (2015) the *IEEE International Conference on High Performance Computing and Communications* (2008, 2009), the *Information Processing and Management of Uncertainty in Knowledge-Based Systems* workshop (2006), the *International Conference on Music Information Retrieval* (2003).

- Opponent for the Ph.D. in Brain, mind and computer science, University of Padua, Italy (2022); for the Ph.D. in Neurosciences, University of Verona, Italy (2021); for the Ph.D. in Computer Sciences, University of Milano, Italy (2020); for the School of Electronic Engineering and Computer Science, Queen Mary University of London, UK (2019); for the Ph.D. in Telecommunication Engineering, Politecnico di Milano, Italy (2018); for the Ph.D. in Information Engineering, University of Padova, Italy (2014).

- Ph.D. thesis examiner for the Doctoral Programme in Electrical & Computer Engineering, McGill University, Montreal, Canada (2009); for the Doctoral Programme in Acoustics and Audio Signal Processing, Aalto University, Espoo, Finland (2006).

11 Invites to conferences, tutorials, talks

- 2022: Federico Fontana and Alberto Bernardini, "Discrete-Time Simulation of Nonlinear Musical Circuits by Means of Physically-Interpretable Iterative Solvers", tutorial at the *International Conference on Digital Audio Effects*, University of Music and Performing Arts, Vienna.

- 2019: "Where do we hear a piano tone to come from?", invited talk at the Centre for Digital Music, School of Electronic Engineering and Computer Science, Queen Mary University of London, October 2019.

- 2018: "The musical keyboard is changing: what will we need to reconstruct sense of touch?", invited talk at the Centre for Digital Music, School of Electronic Engineering and Computer Science, Queen Mary University of London, January 2018.

- 2017: "What in the piano do we hear? (and) What do we play in the piano?", invited seminar at the *MusICA Seminars* series run by the the Acoustics and Audio Group (School of Music) and the School of Informatics at the University of Edimburgh, March 2017.

- 2016: "Vibration and musical consonance", invited talk at the *Haptics and musical practice* workshop, Zurich University of the Arts, February 2016.

- 2015: "Designing on subjective tolerance to approximated piano reproductions", invited paper at the *Third Vienna Talk on Music Acoustics* conference, University of Music and Peforming Arts Vienna, September 2015.

- 2011: "Enactive sound design: Movement, touch, audition", invited talk at the *Multimodality and Cross-modality in Art and Science* workshop, Scuola Internazionale Superiore di Studi Avanzati, Trieste, Italy, June 2011.

- 2009: "Nonlinear delay-free loop filter networks: the case of the voltage-controlled filter", invited talk at the *Current Trends in Music Instrument Research*, a workshop dedicated to Anders Askenfelt's 60th birthday, KTH, Stockholm, October 2009.

- 2009: Federico Avanzini and Federico Fontana, "Numerical techniques for virtual musical instruments and virtual analog audio effects", tutorial at the *International Conference on Digital Audio Effects*, Politecnico di Milano, Como, Italy.

- 2008: Invited expert at the WG4 meeting of the COST SID Action IC0601 on Sonic Interaction Design, TU Berlin, Germany, April 4, 2008.

- 2008: Three lectures entitled "Delay-free nonlinear digital filter loops: Computation and examples", Helsinki University of Technology, Espoo, Finland (March 2-4, 2008). Granted by an STSM from the COST SID Action IC0601 on Sonic Interaction Design.

- 2008: Andrea Cipriani and Federico Fontana, "Gli 'strani anelli' nell'opera di J.S. Bach. Un esempio di musica theoretica, tra ars e scientia", invited event at the Verona Science Festival *Infinitamente*, Verona, February 2008.

- 2005: "Making Computational Systems Biology Using Symbolic Rewriting", seminar at Tsinghua University, Beijing.

- 2004: "Formal Computation of Nonlinear Filter Networks Containing Delay-Free Loops", invited talk for the inauguration of SARC, Queen's University, Belfast, UK.

12 Ph.D. coordination and tutoring

- 2021-24: Coordinator of the PhD in Computer Science and Artificial Intelligence, University of Udine, Italy.

- 2015-19: Coordinator of the PhD in Computer Science, Mathematics and Physics, University of Udine, Italy.

- 2023-26: Supervisor of Marius George Onofrei, Ph.D. in Computer Science and Artificial Intelligence, University of Udine, Italy.

- 2021-24: Supervisor of Paolo Marrone, Ph.D. in Computer Science and Artificial Intelligence, University of Udine, Italy.

- 2020-23: Supervisor of Andrea Gulli, Ph.D. in Computer Science, Mathematics and Physics, University of Udine, Italy.

- 2018-21: Supervisor of Yuri De Pra, Ph.D. in Computer Science, Mathematics and Physics, University of Udine, Italy.

- 2009-13: Supervisor of Federica Bressan, Ph.D. in Computer Science, University of Verona, Italy.

- 2008-12: Supervisor of Stefano Zambon, Ph.D. in Computer Science, University of Verona, Italy.

- 2007-10: Supervisor of Stefano Papetti, Ph.D. in Computer Science, University of Verona, Italy.

13 Supervision of scholarships and grants

- 2021: Tutor during an Erasmus internship of Aalborg University Copenhagen master student Marius George Onofrei to the Dipartimento di Scienze Matematiche, Informatiche e Fisiche, University of Udine, Italy (September-December).

- 2021: Tutor during the thesis internship of master student Titas Lasickas to the Dipartimento di Scienze Matematiche, Informatiche e Fisiche, University of Udine, Italy, funded by a grant of the Aalborg University Copenhagen (March-June).

- 2016: Scientific responsibility of a research grant assigned to Daniele Salvati, University of Udine, Italy.

- 2015: Scientific responsibility of a research grant assigned to Stefano Zambon, University of Udine, Italy.

- 2011: Scientific responsibility of a research grant assigned to Marco Civolani, University of Udine, Italy.

- 2007-10: Scientific responsibility of 18 research grants assigned to Alberto Amendola, Balazs Bank, Federica Bressan, Marco Civolani, Antonio De Sena, Stefano Delle Monache, Delphine Devallez, Carlo Drioli, Stefano Zambon. University di Verona, Italy.

- 2007-10: Scientific responsibility of 4 research contracts assigned to Gianpaolo Borin, Anna De Witt and Pietro Polotti. University of Verona, Italy.

- 2009: Tutor during the research visit of Dr. Jyri Pakarinen to the Dipartimento di Informatica, University of Verona, Italy, funded by a grant of the Aalto University (May-October).

- 2008: Tutor during the research visit of Dr. Heidi-Maria Lehtonen to the Dipartimento di Informatica, University of Verona, Italy, funded by a grant of the Aalto University (Spring).

- 2007: Tutor of a one-month internship of Mr. Paresh Mehta to the Dipartimento di Informatica, University of Verona, Italy (July).

14 Organization of events

- 2013: Art exhibition entitled *Feet into Place*, IEEE World Haptics Conference, Daejeon, Korea (April).

- 2011: Exhibit at the FET11 Conference *Science beyond Fiction*, Budapest, Hungary (May). The exhibit was covered among few others by the BBC.

- 2009: Exhibit at the FET09 Conference *Science beyond Fiction*, Prague, Czech Rep. (March). The exhibit was covered among few others by the BBC.

- 2008: Organization of the event entitled *La ricostruzione virtuale del pianoforte*, University of Verona, Italy, (October). Event covered by RAI 3 Veneto and the Italian national press.

- 2007: Organization of the Italian Association of Acoustics (AIA) workshop entitled *Lo spazio acustico e l'esecuzione musicale – Interazioni e rapporti*, Conservatorio "Dall'Abaco", Verona, Italy.

- 2007: Local organization of the PhD course entitled *Advanced algorithms for the analysis and visualization of DNA and protein sequences*, Dipartimento di Informatica, University of Verona, Italy (July).

- 2007: Local organizer of the *2nd ESF Training Course on Molecular Interactions*, Dipartimento di Biotecnologie, University of Verona, Italy (July).

15 Professional activity for R&D of public and private bodies

- 2012, 2013: Consultant for Viscount International, Mondaino, Italy, during the patenting process of the "Physis" digital piano instrument.

- 1999–2000: Consultant for STMicroelectronics – Automotive Division, Agrate Brianza, MI, Italy, in the design and real-time realization of a digital "Dolby B" noise suppression system.

- 1999–2000: Consultant for Generalmusic, San Giovanni in Marignano, RN, Italy, in the design and real-time realization of sound processing algorithms for electronic keyboards.

- 2000: Consultant for Consorzio Venezia Ricerche, Venice, Italy, in the realization of an high-tide phone-call alerting system based on a server-controlled cluster of speech synthesizers.

- 1996: Engineer at Electrolux Compressors S.A., Barcelona, Spain, working in the design and early testing of an automatic noise & vibration measurement process.

16 Product achievements

- *Physis Piano* - Research coordination of the design team (contractor: Viscount International, Mondaino, RN, Italy) [8]. See also `www.viscount.it`

- *MoogFF* - A widely used module for the SuperCollider real time sound processing free software environment [117]. See also `http://doc.sccode.org/Classes/MoogFF.html`

- *Dolby B Noise Reduction* - Real-time system for the simulation of the analog "Dolby B" codec (contractor: STMicroelectronic Automotive Division, Agrate Brianza, MI, Italy) [9, 10]. See also `www.st.com/internet/automotive/product/152117.jsp`

- *FADE* (Filter Algorithm Dynamic Emulation) - Real-time system for the generation of dynamic piano sounds from static samples (contractor: Generalmusic, San Giovanni in Marignano, RN, Italy). See also `www.soundonsound.com/sos/may03/articles/gempromega3.asp`

- *Call Manager* - An high-tide phone-call alerting system based on a server-controlled cluster of speech synthesizers. See also `www.comune.venezia.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/2421#5cf63c`

References

[] **Products having more than 50 citations in Google Scholar (access Jan. 1, 2024) are noted.**

Edited books and proceedings

[1] S. Serafin, **F. Fontana**, and S. Willemsen, eds., *Proc. of the 26th Int. Conf. on Digital Audio Effects (DAFx23)*, (Copenhagen, Denmark), Sep. 4–7 2023.

[2] **F. Fontana** and A. Gulli, eds., *Machine Sounds, Sound Machines. Proceedings of the 22nd Colloquium on Music Informatics*, (Udine, Italy), Associazione Italiana di Informatica Musicale, IUAV - Università di Venezia, Nov. 20–23 2018.

[3] P. Polotti, G. Klauer, **F. Fontana**, and C. Drioli, eds., *Proceedings of the 19th Colloquium on Music Informatics*, (Trieste, Italy), Associazione Italiana di Informatica Musicale, IUAV - Università di Venezia, Nov. 21–24 2012.

[4] **F. Fontana** and Y. Visell, eds., *Walking with the Senses*. Berlin, Germany: Logos Verlag, Mar. 2012. Available on `http://uniud.academia.edu/FedericoFontana`.

[5] R. Nordahl, S. Serafin, **F. Fontana**, and S. Brewster, eds., *Haptic and Audio Interaction Design, 5th International Workshop, HAID 2010. Proceedings*, vol. 6306 of *Lecture Notes in Computer Science*. Heidelberg, Germany: Springer, 2010. ISBN: 978-3-642-15840-7.

[6] D. Rocchesso and **F. Fontana**, eds., *The Sounding Object*. Florence, Italy: Edizioni di Mondo Estremo, 2003. **330 citations in Google Scholar.**

Patents

[7] Y. D. Pra and **F. Fontana**, "Haptic controller with programmable resistive force." Italian Patent 102021000009068, Apr. 2023.

[8] S. Zambon, E. Giordani, **F. Fontana**, and B. Bank, "A system to reproduce the sound of a stringed instrument." World Patent WO2013135627 A1, Sept. 2013.

[9] **F. Fontana** and M. Bricchi, "Process for noise reduction, particularly for audio systems, device and computer program product therefor." US Patent US2003004591, Jan. 2003.

[10] M. Bricchi and **F. Fontana**, "A process for noise reduction, particularly for audio systems, device and computer program product therefor." EU Patent EP1271772, Jan. 2003.

Editorials

[11] B. Bank, **F. Fontana**, and J. O. Smith, "Guest editor's note special issue on audio filter design," *J. of the Audio Engineering Society*, vol. 70, no. 6, pp. 412–413, 2022.

[12] V. Välimäki and **F. Fontana**, "Special issue on digital audio effects," *Applied Sciences*, vol. 10, p. 2449, Apr. 2020.

[13] R. Stables, J. Hockman, V. Välimäki, and **F. Fontana**, "22nd international conference on digital audio effects dafx 2019 (2–6 september 2019, birmingham, united kingdom)," *Applied Sciences*, vol. 10, p. 1048, Feb. 2020.

[14] M. Geronazzo, F. Avanzini, **F. Fontana**, and S. Serafin, "Interactions in mobile sound and music computing," *Wireless Communications and Mobile Computing*, vol. 2019, 2019.

[15] V. Välimäki, **F. Fontana**, J. O. Smith, and U. Zölzer, "Introduction to the special issue on virtual analog audio effects and musical instruments," *IEEE Trans. on Audio, Speech and Language Processing*, vol. 18, pp. 713–714, 2010.

Journal papers

[16] F. Ganis, A. Gulli, **F. Fontana**, and S. Serafin, "The role of haptics in training and games for hearing-impaired individuals: A systematic review," *Multimodal Technologies and Interaction*, vol. 8, no. 1, 2024.

[17] **F. Fontana**, E. Bozzo, and A. Bernardini, "Extended fixed-point methods for the computation of virtual analog models," *IEEE Signal Processing Letters*, vol. 30, pp. 848–852, 2023.

[18] M. G. Onofrei, **F. Fontana**, and S. Serafin, "Perceptual relevance of haptic feedback during virtual plucking, bowing and rubbing of physically-based musical resonators," *Arts*, vol. 12, no. 4, 2023.

[19] S. Papetti, H. Järveläinen, and **F. Fontana**, "Design and assessment of digital musical devices yielding vibrotactile feedback," *Arts*, vol. 12, no. 4, 2023.

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