Curriculum
of teaching and scientific activity

Federico Fontana

University of Udine
Department of Mathematics, Computer Science and Physics
206 via delle Scienze - Udine 33100 (Italy)

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Contents

1 Personal data

Name	Federico Fontana
birth place	Pordenone
date of birth	May 28, 1969
address	Porcia (PN), via Villa Scura 28
e-mail	federico.fontana@uniud.it
Position	Associate professor since 2014, University of Udine, Italy
PhD	in Computer Science, Department of Computer Science of the University of Verona, Italy (2003)
Degree	in Electronic Engineering, Department of Information Engineering of the University of Padua, Italy (1996)

2 Employment record

2010-2013	Assistant professor at the Department of Mathematics and Computer Science 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	Engineer at Electrolux Compressors S.A., Barcelona, Spain

3 Affiliations

- IEEE Senior Member

- AIMI (Associazione Informatica Musicale Italiana) Member, Secretary

4 Research interests

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

- *Sound and Music computing* [8, 9, 36, 37, 38, 39, 40, 41, 42, 43, 11, 44, 46, 14, 15, 16, 17, 18, 21, 22, 27, 30, 67, 72, 77, 65, 28, 29, 48, 66, 86, 94, 31, 91, 92] 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* [10, 12, 13, 32, 45, 2, 1, 49, 50, 51, 52, 3, 53, 54, 55, 19, 20, 58, 59, 60, 61, 62, 63, 64, 4, 70, 71, 81, 82, 84, 89]. 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.

- *DSP software* [5, 6, 7] 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.

- (2003-2006) *Biosignal processing* [23, 24, 25, 26, 69, 33, 73, 74, 76]. 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.

5 Coordination and participation in research projects

- 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 (2015).

- Foreign Scientific Collaborator in the national project *AHMI - Audio-Haptic modalities in Musical Interfaces*, ZHdK and ETH - Zürich, Switzerland (2014-2016).

- 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 2013 for 6 months; initiative discontinued by Intel).

- Coordinator of the FET-Open EU Project 222107 *NIW - Natural Interactive Walking* (2008-2011).

- Coordinator of the project *E-PHASE - Electronic Piano with Haptic And Spatial Enhancements*, a "Joint Project" between the University of Verona and Viscount SpA (2008-2011).

- 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 (2008-2010).

- 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* (2008-2010).

- 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" (2006-2009).

- Coordinator of the project *Sound synthesis by physical models of the piano*, a "Joint Project" between the University of Verona and Viscount SpA (2007-2008).

- 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 (2005-2006).

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

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

- 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 (2001-2003).

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

6 Teaching

- 2015-16: Course on Object-oriented programming at the Dept. Mathematics and Computer Science of the University of Udine, Italy.

- 2011-16: Lectures on Computer networks at the Dept. Mathematics and Computer Science of the University of Udine, Italy.

- 2011-16: Course on Sound processing at the Dept. Mathematics and Computer Science of the University of Udine, Italy.

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

- 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 at the Faculty of Sciences of the University of Verona, Italy.

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

- 2006-08: Course on Object-based programming at the Faculty of Sciences of the University of Verona, Italy.

- 2005-08: Course on Fundamentals of computer science and at the Faculty of Sciences of the University of Verona, Italy.

- 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 Reviewing

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

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

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

- 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 Science*, *HARTS&Minds*, IEEE *Signal Processing Magazine*, IEEE *Transactions on Signal Processing*, IEEE *Transactions on Audio, Speech, and Language Processing*, IEEE *Transactions on Systems, Man, and Cybernetics*, IEEE *MultiMedia*, 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*, *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 *International Conference on Multimodal Interfaces* (often), the *International Computer Music Conference* (often), the *IEEE International Workshop on Haptic Audio Visual Environments and Games*, the *Conference of the Audio Engineering Society* (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).

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

8 Participation to conference and journal committees

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

- 2016: Member of the Technical Program Committee for the Sound and Music Computing Conference (SMC2016), Hamburg University of Music and Theatre, Germany.

- 2015: Member of the Technical Program Committee of the *International Conference on Digital Audio Effects* (DAFx15) .

- 2014: Member of the Technical Program Committee of the *International Conference on Digital Audio Effects* (DAFx14) Friedrich-Alexander-Universitt Erlangen-Nürnberg, Germany.

- 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.

- 2012: Member of the Technical Program Committee of the *Haptic and Auditory Interaction Design* (HAID2012) conference, CERTEC, Lund University, Sweden.

- 2012: Member of the Technical Program Committee for the Sound and Music Computing Conference (SMC2012), Aalborg University in Copenhagen, Denmark.

- 2011: Member of the Technical Program Committee of the *Haptic and Auditory Interaction Design* (HAID2011) conference, Ritsumeikan University, Kyoto, Japan.

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

- 2011: Member of the Technical Program Committee for the Sound and Music Computing Conference (SMC2011), University of Padua, Italy.

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

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

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

- 2009: Member of the Technical Program Committee for the *International Conference on Digital Audio Effects* (DAFx09), Politecnico di Milano, Como, Italy.

- 2008: Member of the Scientific committee of the *17th Colloquium on Music Informatics* (XVII CIM), Conservatorio B. Marcello, Venice, Italy.

9 Invitation to conferences, tutorials, talks

- "Designing on subjective tolerance to approximated piano reproductions", invited talk at the *Haptics and musical practice* workshop (Zurich University of the Arts, February 2016).

- "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).

- "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).

- "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).

- 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 (2009).

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

- 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).

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

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

10 Tutoring

- Coordinator of the PhD in Computer Science, Mathematics and Physics of the University of Udine, Italy (2015-2019).

- PhD tutor of Dr. Federica Bressan (2009-2013), Dr. Stefano Zambon (2008-2012), and Dr. Stefano Papetti (2007-2010).

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

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

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

- Scientific responsibility of research grants assigned to: Alberto Amendola, Balazs Bank, Gianpaolo Borin, Marco Civolani, Antonio De Sena, Carlo Drioli, Pietro Polotti.

- Many graduation/master theses.

11 Organization of events

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

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

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

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

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

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

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

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

- Consultant for STMicroelectronics – Automotive Division (Agrate Brianza, 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, Italy) in the design and real-time realization of sound processing algorithms for electronic keyboards (1999–2000).

- 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 (2000).

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

13 Product achievements

- *Physis Piano* - Research coordination of the design team (contractor: Viscount International, Mondaino - RN, Italy) [5]. See also `www.viscount.it`

- *MoogFF* - A widely used module for the SuperCollider real time sound processing free software environment [66].

- *Dolby B Noise Reduction* - Real-time system for the simulation of the analog "Dolby B" codec (contractor: STMicroelectronic Automotive Division, A. Brianza - MI, Italy) [6, 7]. 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, S.G. 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 (2000). See also `www.comune.venezia.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/2421#5cf63c`

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[] Edited books and conference proceedings

[1] 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.

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

[3] 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.

[4] D. Rocchesso and F. Fontana, eds., *The Sounding Object.* Florence, Italy: Edizioni di Mondo Estremo, 2003.

Patents

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

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

[7] 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.

Journal papers

[8] M. Geronazzo, F. Avanzini, and F. Fontana, "Auditory navigation with a tubular acoustic model for interactive distance cues and personalized head-related transfer functions," *Journal on Multimodal User Interfaces*, 2016. In press.

[9] F. Fontana, E. Bozzo, and M. Novello, "Decimation in time and space of finite-difference time-domain schemes: Standard isotropic lossless model," *IEEE Trans. on Signal Processing*, vol. 63, pp. 5331–5341, Oct. 2015.

[10] P. Cesari, I. Camponogara, S. Papetti, D. Rocchesso, and F. Fontana, "Might as well jump: sound affects muscle activation in skateboarding," *PloS One*, vol. 9, no. 3, p. e90156, 2014.

[11] F. Fontana, S. Zambon, and E. Bozzo, "Rate switching filters: Model and efficient approximation," *IEEE Trans. on Signal Processing*, vol. 62, pp. 1290–1304, March 2014.

[12] F. Bressan, A. Rodà, S. Canazza, F. Fontana, and R. Bertani, "The safeguard of audio collections: A computer science based approach to quality control–the case of the sound archive of the arena di verona," *Adv. MultiMedia*, vol. 2013, Jan. 2013.

[13] F. Bressan, S. Canazza, A. Rodà, R. Bertani, and F. Fontana, "Pavarotti sings again: A multi-disciplinary approach to the active preservation of the audio collection at the arena di verona," *Journal of New Music Research*, vol. 42, no. 4, pp. 364–380, 2013.

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[16] 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.

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[20] D. Devallez, F. Fontana, and D. Rocchesso, "Linearizing auditory distance estimates by means of virtual acoustics," *Acta Acustica united with Acustica*, vol. 94, no. 6, pp. 813–824, 2008.

[21] F. Fontana and F. Avanzini, "Computation of delay-free nonlinear digital filter networks. Application to chaotic circuits and intracellular signal transduction," *IEEE Trans. on Signal Processing*, vol. 56, pp. 4703–4715, Oct. 2008.

[22] F. Fontana and D. Rocchesso, "Auditory distance perception in an acoustic pipe," *ACM Trans. Applied Perception*, vol. 5, no. 3, pp. 16:1–16:15, 2008.

[23] F. Fontana and V. Manca, "Predator-prey dynamics in P systems ruled by metabolic algorithm," *BioSystems*, vol. 91, pp. 545–557, Mar. 2008.

[24] F. Fontana and V. Manca, "Discrete solution of differential equations by metabolic P systems," *Theoretical Computer Science*, vol. 372, pp. 165–182, Mar. 2007.

[25] L. Bianco, F. Fontana, and V. Manca, "P systems with reaction maps," *International Journal of Foundations of Computer Science*, vol. 17, no. 1, pp. 27–48, 2006.

[26] F. Fontana and G. Franco, "Finding the maximum element using P systems," *J. of Universal Computer Science*, vol. 10, no. 5, pp. 567–580, 2004.

[27] F. Fontana, "Computation of linear filter networks containing delay-free loops, with an application to the waveguide mesh," *IEEE Trans. on Speech and Audio Processing*, vol. 11, pp. 774–782, Nov. 2003.

[28] B. Bank, F. Avanzini, G. Borin, G. D. Poli, F. Fontana, and D. Rocchesso, "Physically informed signal processing methods for piano sound synthesis: a research overview," *EURASIP J. Audio Signal Processing*, no. 10, pp. 941–952, 2003. Special issue on Digital Audio for Multimedia Communications.

[29] F. Fontana and M. Karjalainen, "A digital bandpass/bandstop complementary equalization filter with independent tuning characteristics," *IEEE Signal Processing Letters*, vol. 10, pp. 88–91, Apr. 2003.

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[31] F. Fontana and D. Rocchesso, "Physical modeling of membranes for percussion instruments," *Acustica*, vol. 83, pp. 529–542, Jan. 1998.

Book chapters

[32] M. Marchal, G. Cirio, Y. Visell, F. Fontana, S. Serafin, J. Cooperstock, and A. Lécuyer, "Multi-modal rendering of walking over virtual grounds," in *Human Walking in Virtual Environments* (F. Steinicke, Y. Visell, J. Campos, and A. Lécuyer, eds.), pp. 263–295, Springer New York, 2013.

[33] L. Bianco, F. Fontana, G. Franco, and V. Manca, "P systems for biological dynamics," in *Applications of Membrane Computing* (G. Ciobanu, G. Păun, and M. J. Pérez-Jiménez, eds.), pp. 81–126, Springer, 2006.

[34] V. Manca, *Metodi Informazionali.* Torino, Italy: Bollati Boringhieri, 2003. In Italian. Appendice by D. Botturi, F. Fontana, and G. Pravadelli.

[35] F. Fontana, A. Fusiello, M. Gobbi, V. Murino, D. Rocchesso, L. Sartor, and A. Panuccio, "A cross-modal electronic travel aid device," in *Human Computer Interaction with Mobile Devices* (F. Paternò, ed.), pp. 393–397, Milano, Italy: Springer, 2002.

Conference proceedings

[36] F. Fontana, S. Zambon, and Y. D. Pra, "Designing on subjective tolerance to approximated piano reproductions," in *Proc. of the Third Vienna Talk on Music Acoustics*, (Vienna, Austria), pp. 197–204, Sep. 16-19 2015. Invited paper.

[37] L. Gabrielli, S. Zambon, and F. Fontana, "Parallel digital signal processing for efficient piano synthesis," in *Proc. 23rd European Signal Processing Conference (EUSIPCO 2015)*, (Nice, France), pp. 2019–2022, Aug. 31–Sep. 4 2015.

[38] M. Geronazzo, F. Avanzini, and F. Fontana, "Use of personalized binaural audio and interactive distance cues in an auditory goal-reaching task," in *Proc. 21st International Conference on Auditory Display (ICAD 2015)* (K. Vogt, A. Andreopoulou, and V. Goudarzi, eds.), (Graz, Austria), July 6-10 2015.

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[40] Y. de Pra, F. Fontana, and F. Spoto, "Confronto tra sistemi di rilevamento del gesto basati su sensori a infrarossi o ultrasuoni per applicazioni di pianoforte virtuale," in *Proc. XX CIM*, (Rome, Italy), 2014. Recipient of the 2014 Piccialli Award. In Italian.

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