

Curriculum Vitae

Amalia de Götzen

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Name	Amalia de Götzen
Born	San Vito al Tagliamento (PN) 09-06-1975
Current Position	PhD student at the Department of Computer Science of the University of Verona.
Degree	Electronic Engineering, University Of Padova, November 26 2002
Title	Expressiveness analysis of virtual sound movements and its musical applications
Advisor	Prof. Giovanni De Poli
Coadvisor	Ing. Antonio Rodà
Conservatory Degrees	piano and electronic music
Piano	Conservatory of Padova, 1996
Advisor	Prof. Daniele Dazzan
Electronic Music	Conservatory of Padova, February 2003
Advisor	Prof. Nicola Bernardini
High School	Classical Studies, Portogruaro (Venice)

1 Research

2004-2005

During the second and third year of my PhD I worked to a thesis titled “Predictive HCI methods with audio feedback”. The main idea was to study interfaces where the information is conveyed through

different modalities. The effectiveness of the multimodal interaction will be evaluated using predictive models which have been demonstrated to be useful in this kind of context too. Gesture interaction with audio feedback, and in general non verbal interaction, can be considered the natural application of our study. Gesture and sound seem naturally connected in a clear and obvious way: the image of instrument players learning to use their body in order to produce sound is indeed widespread and compelling enough. While each instrument needs specific gestures to be played in a correct and pleasant way, invariant laws regulating gestures across all instruments may be found. Musical gesture can be simply thought as a gesture that produces sounds in a continuous feedback loop: this is a general definition that can be used in many interactive contexts besides the musical one.

2003

While I was doing the first year of my PhD in Verona, I worked at the CSC (Center of Computational Sonology) and GEM (General Music) in the project "MEGA-Multisensory Expressive Gesture Applications", UE IST-1999-20410 (financed by EU community. The project focuses on the non-verbal communication studying multi-sensorial interfaces) and my research was focused on the extraction of expressive features and models for expressive sound spatialization. The main idea of this study was to demonstrate that sound spatialization can be considered a musical parameter, and as such, it can convey expressiveness as well as melody, articulation etc. The model that has been derived from this study has been used in a Video-Opera by Adriano Guarnieri.

2 Teaching and seminars

From September 2004 to September 2005 I have been lecturer at the Medialogy department of the Aalborg University in Copenhagen, doing research and teaching.

2.1 Classes

- **2004**
 - Sound perception (21 hours) at the Medialogy Bachelor
 - Signal processing in automated perception (30 hours) at the Medialogy Bachelor
- **2005**
 - Numerical Methods (48 Hours) at the Medialogy Master
 - Math 2 (24 Hours) at the Medialogy Bachelor

2.2 Seminars

- May 2003 - Expressiveness analysis of virtual sound movements and its musical applications - Complementi di interazione uomo macchina, Università di Verona;
- May 2004 - Expressive gestures with multimodal feedback in continuous Human-Computer Interaction - Complementi di interazione uomo macchina, Università di Verona;
- June 2004 - Il subtyping in un linguaggio funzionale (MinML) - Università di Verona;

- June 2005, Exploring multimodal spaces: physical modeling, gestures, and composition, Università di Musica und Darstellende Kunst in Vienna, Austria;
- July 2005, The interactive book, The first S2S2 Summer School;
- September 2005, Tecniche della musica elettronica: Luigi Nono 1960-75, Auditorium dell'Istituto d'Arte di Nove;
- September 2005, Audio feedback in predictive HCI methods, Aalborg University Copenhagen, Mediaology department, Copenhagen, Denmark;
- November 2005, Medea: a good excuse for research, Casa Paganini, Genova, Italy.

3 Specialistic classes attended

- May 19-30, 2003 - Human-Computer Interaction - post-millennial models, Prof. Alan Dix, Computing Department - Lancaster University, UK;
- April-June 2003 - Complementi di interazione uomo macchina, Prof. Davide Rocchesso, Dipartimento di Informatica di Verona;
- June 16-27, 2003 - Quantum Computing, Alessandra Di Piero (University of Pisa) Dipartimento di Informatica (University of Verona);
- July 14-16, 2003 - Visualizing multidimensional geometry and its applications, Prof. Alfred Inselberg (Tel Aviv University - Israel), Dipartimento di Informatica (University of Verona);
- September 15 - October 1, 2003 - Fondamenti di linguaggi di programmazione: tipi e modelli, Proff. Roberto Giacobazzi e Andrea Masini, Dipartimento di Informatica (University of Verona);
- October 13 - November 4, 2003 - Modelli per l'analisi e l'elaborazione dei dati, Proff. Stefano De Marchi, Paolo Fiorini, Andrea Fusiello, Giandomenico Orlandi, Davide Rocchesso, Dipartimento di informatica (University of Verona);
- January-February 2004 - Linguaggi di programmazione, Prof. Giacobazzi Dipartimento di informatica (University of Verona);
- May 17-20, 2004 - Advanced School on Computer Vision, Pattern Recognition and Image Processing: Bayesian Networks and Algorithms for Inference and Learning: Applications in Computer Vision, Audio Processing, and Molecular Biology, Prof. Brendan J. Frey;
- July 25-29 2005, The first S2S2 Summer School, InfoMus Lab - DIST - University of Genova, Italy.

3.1 Publications

de Götzen, A., Arfib, D., Bernardini, N., " Traditional(?) implementation of a phase vocoder: the tricks of the trade", DAFX, Verona, Italy, 2000;

de Götzen, A., "Expressiveness analysis of virtual sound movements and its musical applications", Proceedings of the XIV Colloquium on Musical Informatics (XIV CIM 2003), Florence, Italy, pp. 64-68, 2003;

de Götzen, A., "Expressiveness analysis of virtual sound movements: audio-video cross correlation", Proceedings of the Stockholm Music Acoustics Conference 2003 (SMAC 03), Stockholm, Sweden, August 6-7-8-9, 2003

de Götzen, A., "Enhancing engagements in multimodality environments by sound movement in a virtual space" IEEE Multimedia, April 2004;

de Götzen, A., "The sounding gesture: an overview", DAFx, Naples, Italy, 2004;

de Götzen, A., Serafin, S., Kojs, J., Nordahl R. "Fitts'law in an audio perspective", Proceedings of the Fourth danish HCI research symposium, Aalborg University, Danemark, November 2004;

de Götzen, A., Rocchesso, D.; "Continuous sonic interaction in books for children" , Proceedings of the International Workshop on Auditory Displays for Mobile Context-Aware Systems, 11th of May 2005, München, Germany;

de Götzen, A.; Rocchesso D. "Fitts'law with multimodal feedback", Proceedings of the HCIItaly 2005 workshop, 13 of September 2005, Rome, Italy;

de Götzen, A. Rocchesso D. "Audio feedback in predictive HCI methods", Proceedings of the SMC 2005 Conference, 24-26 of November 2005, Salerno, Italy;

de Götzen, A., Serafin, S., "The Croaker: design and evaluation of a new multimodal interface", Proceedings of the SMC 2005 Conference, 24-26 of November 2005, Salerno, Italy;

de Götzen, A., Serafin, S., "Evaluation of musical instruments: the Theremin and the Croaker", Proceedings of the ENACTIVE Conference, 17-18 of November 2005, Genova, Italy.

4 Research projects, coordination and organization

I have participated in the research activities of national and European projects:

- *ENACTIVE*, Network of Excellence: Project IST-2004-002114-ENACTIVE. 24 partners. Scientific Coordinator: SCUOLA SUPERIORE SANT'ANNA, Pisa, Italy. Duration: January 2004 - December 2007
- *S2S²-Sound to Sense, Sense to Sound*: FET-Open Coordination Action (number of contract: IST-2004-03773). Participants: Stockholm University of Technology, University of Padova, University of Verona, University of Genova, Helsinki University of Technology, University of Paris, University of Ghent, University of Dijon, Fundació Universitat Pompeu Fabra of Barcelona, University of Wien. Scientific Coordinator: Prof. Nicola Bernardini, Media Innovation Unit of Firenze Tecnologia. Duration: June 2004 - May 2007.
- *Sound/Control Co-Design*: sintesi del suono e dispositivi di controllo gestuale (sound synthesis and gestural control devices), national project Cofin2003. Participants: University of Padova, University

of Verona, University of Genova. Scientific Coordinator: prof. Giovanni De Poli, University of Padova. Duration: Jan. 2004 - Dec. 2005.

- *Mega-Multisensory Expressive Gesture Applications*, EU IST-1999-20410. Participants: University of Genova, University of Padova, Consorzio Pisa Ricerche, Stockholm University of Technology, University of Ghent, University of Uppsala. Industrial partners: GeneralMusic, Telenor, Eido-Media. Scientific Coordinator: prof. Antonio Camurri, University of Genova. Duration: Nov. 2000 - Oct. 2003.