

# Andre Holzapfel

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CONTACT INFORMATION	Music Technology Group Universitat Pompeu Fabra Roc Boronat, 138 08018 Barcelona, Spain	xyzapfel@gmail.com www.csd.uoc.gr/ hannover
CITIZENSHIP	German	
RESEARCH INTERESTS	Music information retrieval, signal analysis, voice processing, ethnomusicology	
EDUCATION	<b>University of Crete</b> , Heraklion, Greece  P.h.D., Computer Science, March 2010 <ul style="list-style-type: none"><li>• Thesis topic: Similarity methods for computational ethnomusicology</li><li>• Advisor: Yannis Stylianou</li><li>• Area of Study: Music Information Retrieval</li></ul> M.S., Computer Science, September 2006 <ul style="list-style-type: none"><li>• Thesis topic: A component based music classification approach</li><li>• Advisor: Yannis Stylianou</li><li>• Area of Study: Music Information Retrieval</li></ul> <b>University of Applied Sciences Duesseldorf</b> , Duesseldorf, Germany  Diplomingenieur, Media Technology, July 2004 <ul style="list-style-type: none"><li>• Thesis Topic: Development of a classifier for a speech recognition system based on a Relevance Vector Machine</li><li>• Advisor: Professor H.G. Meier</li><li>• Area of Study: Speech Recognition</li></ul>	
PROFESSIONAL EXPERIENCE	<b>Universitat Pompeu Fabra</b> , Barcelona, Spain  <i>Researcher</i> <ul style="list-style-type: none"><li>• Tonal and rhythmic properties of Turkish Makam music</li><li>• Research is conducted in cooperation with Barış Bozkurt in Bahçeşehir University, Istanbul.</li></ul> <b>INESC Porto</b> , Porto, Portugal  <i>Researcher</i> <ul style="list-style-type: none"><li>• Signal representations for beat tracking and rhythmic similarity</li><li>• Tools for music generation</li><li>• Automatic recognition of rhythmically complex music samples</li></ul> <b>Austrian Research Institute for Artificial Intelligence (OFAI)</b> , Vienna Austria  <i>Researcher</i> <ul style="list-style-type: none"><li>• Improvement of rhythmic content descriptors for music similarity</li><li>• Background music detection in broadcast news</li></ul>	<b>from May 2012</b>  <b>from April 2011 to March 2012</b>  <b>from September 2010 to February 2011</b>

**Technological Educational Institute of Crete, Dept. of Music Technology & Acoustics, Rethymnon, Greece**

*Lecturer* **from October 2009 to June 2010**

- Audio & Music Programming Environments (Csound, Pd)
- Sound Synthesis II (Max/MSP)
- Multimedia Applications (Photoshop, Director)

**Creamware Datentechnik, Siegburg, Germany**

*Software Developer* **September 2002 to February 2003**

- Completion of implementation of amplifier emulations
- Software packages published later on by Creamware

**Creamware Datentechnik, Siegburg, Germany**

*Practical Training* **March 2002 to September 2002**

- Music Software Engineering
- Prototyping of a real time guitar amplifier emulation including speaker emulation.

PROJECTS/  
EXCHANGES

**Music Tradition in Crete, Crete, Greece**

*Participation on a field recording excursion to the island of Crete, as one of the heads of the excursion. This excursion was organized by Michael Hagleitner, assistant at the Department of Musicology at University of Vienna. Principal tasks: interviews and coordination.* **August 2011**

**Erasmus exchange, Izmir, Turkey**

Izmir Institute of Technology, Dept. of Electrical and Electronics Engineering,

*Subjects: musical instrument onset detection, theory and practice of classical Ottoman music* **July-September 2008**

**eINTERFACE'07, Istanbul, Turkey**

*Realtime and Accurate Musical Control of Expression in Singing Synthesis (RAMCESS)* **July-August 2007**

**eINTERFACE'06, Dubrovnik, Croatia**

*Multimodal Character Morphing* **July-August 2006**

SKILLS

Well founded theoretical background in signal processing and pattern recognition, as well as coding theory and psychoacoustics.

Musical experience: 20 years of experience in guitar and oud (rock, traditional), singing lessons both in classical western and Ottoman music

Programming languages: C, C++, Java, Csound, matlab

Languages: German, English, Greek

## PUBLICATIONS

### JOURNALS

Olmo Cornelis, Joren Six, Andre Holzapfel and Marc Leman. Evaluation and recommendation of pulse and tempo annotation in ethnic music. *Journal of New Music Research*, submitted.

André Holzapfel, Matthew E. P. Davies, José R. Zapata, João Lobato Oliveira and Fabien Gouyon. Selective sampling for beat tracking evaluation. *IEEE Transactions on Audio, Speech and Language Processing*, accepted.

Andre Holzapfel and Yannis Stylianou. Scale transform in rhythmic similarity of music. *IEEE Transactions on Audio, Speech and Language Processing*, Vol. 19, Nr.1, pp. 176-185, 2011.

Andre Holzapfel, Yannis Stylianou, Ali C. Gedik and Barış Bozkurt. Three dimensions of pitched instrument onset detection. *IEEE Transactions on Audio, Speech and Language Processing*, Vol. 18, Nr.6, pp. 1517-1527, 2010.

N. d'Alessandro, O. Babacan, B. Bozkurt, T. Dubuisson, A. Holzapfel, L. Kessous, A. Moinet, M. Vlieghe and T. Dutoit. RAMCESS 2.x FRAMEWORK - EXPRESSIVE VOICE ANALYSIS FOR REALTIME AND ACCURATE SYNTHESIS OF SINGING. *Journal on Multimodal User Interfaces*, Vol. 2, Nr.2, pp. 133-144, 2008.

Andre Holzapfel and Yannis Stylianou. Musical genre classification using Non-negative Matrix Factorization based features. Special Issue of *IEEE Transactions on Audio, Speech and Language Processing on Music Information Retrieval*, Vol. 16, Nr.2, pp. 424-434, 2008.

### CONFERENCES

George Sioros, Andre Holzapfel and Carlos Guedes. On measuring syncopation to drive an interactive music system. *International Society for Music Information Retrieval Conference (ISMIR)*, Porto, Portugal, 2012.

José R. Zapata, Matthew E. P. Davies, Andre Holzapfel, João Lobato Oliveira and Fabien Gouyon. Assigning a confidence threshold on automatic beat annotation in large datasets. *International Society for Music Information Retrieval Conference (ISMIR)*, Porto, Portugal, 2012.

Andre Holzapfel and Matthew Davies and Jose Ricardo Zapata and Joao Lobato Oliveira and Fabien Gouyon. On the automatic identification of difficult examples for beat tracking: towards building new evaluation datasets. *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)*, Kyoto, Japan, 2012.

Andre Holzapfel and Gino Angelo Velasco and Nicki Holighaus and Monika Dörfler and Arthur Flexer. Advantages of nonstationary Gabor transforms in beat tracking, *Proc. of ACM Multimedia*, Scottsdale, Arizona, USA, 2011.

Andre Holzapfel and Arthur Flexer and Gerhard Widmer. Improving tempo-sensitive and tempo-robust descriptors for rhythmic similarity. *Sound and Music Computing Conference (SMC)*, Padova, Italy, 2011.

Andre Holzapfel and Yannis Stylianou. Parataxis: Morphological similarity in traditional music. *International Society for Music Information Retrieval Conference (ISMIR)*, Utrecht, Netherlands, 2010.

Emmanouil Benetos and Andre Holzapfel and Yannis Stylianou. Pitched instrument onset detection based on auditory spectra. International Society for Music Information Retrieval Conference (ISMIR), Kobe, Japan, 2009.

Andre Holzapfel and Yannis Stylianou. Rhythmic similarity in traditional Turkish music. International Society for Music Information Retrieval Conference (ISMIR), Kobe, Japan, 2009.

Andre Holzapfel and Yannis Stylianou. A scale transform based method for rhythmic similarity of music. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Taiwan, 2009.

Maria Markaki, Andre Holzapfel and Yannis Stylianou. Detection of singing voice activity using modulation frequency features. ISCA Workshop on Statistical And Perceptual Audition, Brisbane, Australia, 2008.

Andre Holzapfel and Yannis Stylianou. Beat tracking using group delay based onset detection. International Society for Music Information Retrieval Conference (ISMIR), Philadelphia, USA, 2008.

Andre Holzapfel and Yannis Stylianou. Rhythmic similarity based on Dynamic Periodicity Warping. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Las Vegas, USA, 2008.

Andre Holzapfel and Yannis Stylianou. A statistical approach to musical genre classification using Non-negative Matrix Factorization. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Honolulu, USA, 2007.

T. Dutoit, A. Holzapfel, M. Jottrand, A.Moinet, J. Perez and Y. Stylianou. Towards a voice conversion system based on frame selection. IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP), Honolulu, USA, 2007.

Andre Holzapfel and Yannis Stylianou. Singer identification in Rembetiko music. Sound and Music Computing Conference (SMC), Lefkada, Greece, 2007.