

Karim Barkati

Computer Music R&D

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Profile

I am a researcher in Computer Music. I studied both Music as a clarinet player and Computer Science. After a Master of Science at IRCAM, I graduated with a Ph.D. in Computer Music from University of Paris 8 under the direction of Pr. H. Vaggione, entitled “*Between Real Time and Differed Time – Techniques, Practices and Stakes of Computer Music*”. I currently work at IRCAM (Institute for Music/Acoustic Research and Coordination).

IT Skills

Mainstream	C, C++, Java, Lisp, Perl, Shell, \LaTeX , Lex & Yacc, Matlab	Music	Max/MSP, Pure Data, Csound, SuperCollider, ChucK, Faust, Lilypond
Web	HTML, JavaScript, CSS, XML, XSL, XSLT, SVG, PHP, MySQL	Environments Versioning	Mac OS X, Linux; Emacs, XCode SVN, CVS, Git

Other Skills

Writing	Thesis, articles (<i>fr</i> , <i>en</i>), documentation (<i>fr</i> , <i>en</i>), teaching material	Office	\LaTeX , Word, Excel, PowerPoint, Photoshop, Illustrator
Organization	Teamwork, education, supervision, coordination	Creativity	Clarinet, composition, music engraving, logo design, webmastering

Work Experience

- mar. 11 – present **R&D Associate**, IRCAM, Paris.
Modeling, tracking and archiving of the creative processes in digital audio production.
- jan. 10 – jan. 11 **Research Engineer**, MINES ParisTech, Computer Science Center, Fontainebleau.
Comparative study of general and musical synchronous languages.
- jul. 09 – jan. 10 **Research Engineer**, GRAME (National Center of Musical Creation), Lyon.
Mathematical documentation of digital signal processors.
- apr. 09 – jul. 09 **Research Engineer**, Jean Monnet University, CIEREC, Saint-Étienne.
Online application for real-time digital audio effects categorization.
- feb. 09 – apr. 10 **Research Engineer**, CICM MSH Paris-Nord, Saint-Denis.
Field survey on usages of digital stage-management
- 2001–2009 **Ph. D. in Computer Music**, University of Paris VIII, with honors.
Research on real time and differed time. Development of ten softwares with musicians.
- 2000–2001 **Master Thesis**, LIP6 – Computer Laboratory of University Paris 6.
SVG typographical rendering of MusicXML scores through XSLT stylesheets.

University Lectures > 800 hours

- 2000–2011 **Lecturer**, L1, L2, L3, M1, M2, Computer Science and Computer Music.
University of Paris-Est, University of Paris VIII; IMAC Engineer School, MINES ParisTech.

Collective Responsibilities

- Reviewing Reviewer for peer reviewed conferences and programs (Sound and Music Conference; *Journées d’Informatique musicale*; IRCAM’s Musical Research Residency Program).
- Associations Member of Dotcomzz. Speaker for Paris-Montagne.

Education

- 2001–2009 **Ph. D. in Computer Music**, *University of Paris VIII*, with honors.
Between Real Time and Differed Time - Techniques, Practices and Stakes of Computer Music.
Dir. : Horacio Vaggione.
- 2001–2007 **1st Prizes**, *Conservatory of Music of Gennevilliers*.
Music Theory ; Chamber Music ; Clarinet ; Musical Analysis.
- 2000–2001 **Master's Degree ATIAM**, IRCAM/LIP6.
Acoustics, Signal Processing and Computer Science applied to Music.
- 1999–2000 **Master's Degree of Musicology**, *Université Paris VIII*, A+.
Programming of software tools for composers.

Languages

French	mother tongue	
English	operational	<i>Stanford University visiting at CCRMA (2011), articles</i>
German	notions	<i>five visits in Germany</i>
Arabic	notions	<i>eleven stays in the Maghreb</i>

Publications

- K. Barkati, Y. Orlarey, and J. Barthélemy. Abstraction du processus temps réel : une stratégie pour la préservation à long terme. *Revue française d'informatique musicale (submitted)*, 2012.
- K. Barkati and P. Jouvelot. Synchronous programming in audio processing : A use case study. *ACM Computing Surveys (submitted)*, 2012.
- K. Barkati and Y. Orlarey. Auto-documentation mathématique pour le traitement du signal avec Faust. In *Actes des Journées d'informatique musicale*, 2011.
- K. Barkati, D. Fober, S. Letz, and Y. Orlarey. Two recent extensions to the Faust compiler. In *Proceedings of the Linux Audio Conference*, 2011.
- J. Barthélemy, A. Bonardi, Y. Orlarey, S. Lemouton, R. Ciavarella, and K. Barkati. Toward an organology of virtual instruments in computer music. In *Proceedings of the International Computer Music Conference*, 2010.
- K. Barkati and S. Réthoré. L'instrument augmenté pour l'improvisation : le cas de l'alto avec Rose amère. In *Actes des Journées d'informatique musicale*, 2010.
- K. Barkati. La polysémie du temps réel et du temps différé. In *Actes des Journées d'informatique musicale*, 2009.
- K. Barkati. Enquête de terrain sur les usages de la régie numérique. Technical report, CICM, 2009.
- K. Barkati and M. Lorenzo. Cbox : entre temps réel et temps différé. In *Actes des Journées d'informatique musicale*, 2005.
- K. Barkati and E. Saint-James. SVG & XSLT : une portée notable. In *Actes des Journées d'informatique musicale*, 2003.
- K. Barkati. K-Box : programmation d'une extension logicielle pour instrument percussif. In *Actes des Journées d'informatique musicale*, 2001.

Teaching Material

- K. Barkati. *Les programmes Allegro Musique et Les carnets de Musique*. Allegro Partners, 2005.
- K. Barkati. *Dix thèmes classiques pour la clarinette*. Éditions Transatlantiques, 1999.

Interests

Clarinet (jazz and chamber music), music engraving, swimming.