

Julien Bloit
Born 1979, France
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As a software engineer and scientist, I'm driven by my background as a musician to apply new media technology to innovative practices in the field of performing arts and interactive experience.

Experience

2010-2013 : Freelance art engineering

- Generative sound design for *Proposal for Resuscitating Prehistoric Creatures*. An installation by Marguerite Humeau, Collective exhibition *Politique Fiction*, Cité du Design, France.
- Wireless motion sensors design for *Sabour*, a performance with dance and drawings in motion by Erika Hedayat and Tamara Erde. Le Fresnoy National Studio for Contemporary Art, France.
- Interactive sound programming for *EO*, a collaborative 3D game by Emmanuel Berriet, at the Géode, Paris.
- Real time recognition of extended-technique trombone sounds. For performer Denis Beuret.
- Pitching and writing of *Les instantanés de l'IRCAM*, a series of short films presenting scientific questions at stake in the IRCAM research teams.
- Co-founding of *Association Phonotonic*, a non-profit dedicated to art-science projects and education.

2008-2013 : Research and Development, IRCAM, IMTR team.

- Sound design environment : design and implementation in Java and Max/MSP.
- C++ library for an online singing application : automatic alignment and pitch correction.
- Interaction design and software implementation of Urban Musical Game, a public musical installation.
- Interaction programming and demonstration for the *MO* (Modular Musical Objects), winning the Guthman New Instrument Competition, and presented at the *Talk To Me* collective exhibition, MOMA, New York.
- Automobile sound simulation tool for the design branch of PSA Peugeot Citroën (French car brand).

2005 : MSc Internship, Voxler.

Scientific study and prototype implementation for a real-time voice controlled music instrument.

2002-2004 : Hypermedia and web design, IRCAM, Hypermedia studio.

- *From Kafka to K...* : Design and implementation of an interactive DVD documenting P. Manoury's opera «K...».
- *DVD à la carte* : Design and implementation of a web service to order custom DVDs from institutional archives.
- Hypermedia prototypes documenting musicologic and ethnographic works.

2000 : Engineering internship. Groupe Dunes.

Control and interaction software for *L'espace turbulent*, and *Sans titre provisoire*, two interactive sound and video installations by Bernard Misrachi and Madeleine Chiche presented near Paris and in Québec City.

Degrees

2005-10 : PhD in acoustics, signal processing and computer science applied to music. UPMC - IRCAM.

Musical interaction and sonic gestures : temporal modeling of audio descriptors. Supervisor : Xavier Rodet.

2004-05 : MSc in acoustics, signal processing and computer science applied to music. UPMC - IRCAM.

Thesis work for *Voxler* company, on a real-time singing analysis tool. Supervisor : Norbert Schnell.

1997-2002 : Computer Science engineering. University of Technology of Compiègne

Minor in cultural industries engineering, with philosopher Bernard Stiegler.

Skills

Scientific : temporal sequence modeling, phoneme recognition, audio feature extraction, bayesian machine learning, model selection, realtime inference.

Programming languages and environments :

C, C++, Java, Matlab, Max/MSP, Pure Data, Processing, OpenFrameworks, Arduino, Python, HTML, CSS.

Computer tools :

Ableton Live, MaxForLive, Audacity, Audiosculpt, Melodyne, Wordpress, iMovie, Adobe CS.

Publications

- Bloit J., Rasamimanana,N. and Bevilacqua,F. Modeling and segmentation of audio descriptor profiles with Segmental Models. Pattern Recognition Letters. 2009.
- Bloit J., Rasamimanana,N. and Bevilacqua,F. Towards morphological sound description using segmental models. DAFX 2009.
- Bloit J., Rodet,X. Short-time Viterbi for online HMM decoding : evaluation on a real-time phone recognition task. ICASSP 2008.
- Bloit J. Modélisation et reconnaissance d'événements musicaux en temps réel. CNRS technical report, mar. 2007.
- Bloit,J. Analyse temps réel de la voix pour le contrôle de synthèse audio. Master Thesis, ATIAM, 2005.

Talks

- The opera of Prehistoric Creatures. With Marguerite Humeau. CCRMA colloquium, Stanford University, Jan. 2013.
- *Towards sonic gesture models for interaction*. Mills College, Seminar in Electronic Music Performance (Chris Brown), feb. 2011.
- *Modélisation d'événements musicaux : approche multi-flux*. IRCAM research and technology seminars, oct. 2008.
- *Short-time Viterbi for online HMM decoding*. UCSD, computer music seminar. nov. 7, 2007.
- *Décodage dans un flux : reconnaissance et alignement de parole*. IRCAM research and technology seminars, sep. 2007.
- *Modélisation et reconnaissance en temps réel d'événements musicaux : sélection de modèle et décodage*. IRCAM research and technology seminars, dec. 2006.

Selected awards and press

- *Roars remade*. Wired Magazine (UK edition), May 2012.
- *What Makes a Truly New Instrument? Human Gestures Power Winners of Guthman Competition*. Createdigitalmusic.com, March 2011.
- Winning team of the 2011 Margaret Guthman Musical Instrument Competition as part of the Interlude consortium.

Musical activities

- Drummer for the French power-jazz band *Kumquat* and rock band *Spider Heart*, on three distributed albums.
- Studied classical composition with Horia Surianu.
- Attended improvisation workshops In NYC with Jim Black, Tom Rainey, Steve Coleman.

Teaching

- Max/MSP classes for audio professionals at IRCAM, Paris
- Max/MSP intro classes, Noisebridge hackerspace, San Francisco.
- Introduction to Scheme, University *Pierre et Marie Curie* (Paris 6, France).
- Introduction to Maple, University *Pierre et Marie Curie* (Paris 6, France).