

Curriculum Vitae – Gaël RICHARD

French,
Télécom Paris, Institut Polytechnique de Paris
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CURRENT POSITION

Executive Director of Hi! Paris
Professor at Telecom Paris, Institut Polytechnique de Paris

MAIN RESEARCH INTERESTS

Signal representations and signal models (Subspace methods, sparse representation, atomic decomposition, Non Negative Matrix factorization...),
Source Separation,
Machine learning methods for audio/music signals, Machine listening
Music Information Retrieval (MIR), Music transcription,
Audio Coding, 3D Audio,
Multimedia and speech signal analysis.

PREVIOUS POSITIONS

2015-2021 Head of the Image, Data, Signal department at Telecom Paris (*120+ members including 40 permanent academic staff and over 80 PhD*)
2001 - 2004 Associate Professor in signal processing at TELECOM Paris
2000 - 2001 Software project leader at Philips Consumer Communications, France.
1997 - 2000 Project leader at Matra Nortel Communications and then L&H (France)
1994 - 1996 Post-Doc at CAIP center, Rutgers, Univ. , USA (supervision: Pr. James Flanagan).
1990 - 1994 Ph.D student at LIMSI-CNRS, on speech synthesis (supervision: Dr. d'Alessandro).
1989 - 1990 Master internship at KTH, Sweden on singing voice synthesis.

APPOINTMENTS HELD

2020 - Executive director of Hi! Paris
2020 - Member of the Academic council of IP Paris
2020 - Member of steering board of the *Computer Science and AI* department of IP Paris.

2015 - 2021 Head of the *Image, Data, Signal* (IDS) department at Telecom Paris
2015 - 2021 Member of the steering committee of Telecom Paris

2017-2019 Member of strategic committee of Labex SMART (UPMC,..).
2015-2019 Member of the steering committee of the Chair of Machine Learning for Big Data
2016-2019 Member of the scientific committee of Teralab – Big Data platform
2005 - 2015 Head of the « Audio, Acoustics and Optical Waves » research group
2013 - 2015 Elected member of the Academic Senate of University ParisSaclay
2006 - Elected member of the LTCI/CNRS research lab council
2011 Member of the Research council of Télécom Paris

- 2005 - Member of the Signal and Image department council
2005 – 2012 Member of the Teaching council of Telecom Paris

PROFESSIONAL MEMBERSHIP

Fellow IEEE member, chair of the IEEE *Audio and Acoustic Signal Processing* technical committee
EURASIP member
AES member
Former ISCA member

EDUCATION

- 2017 « Auditeur » of the *Institut des Hautes Etudes pour la Science et la Technologie* (IHEST)
2001 « Habilitation à Diriger des Recherches », University Paris-Sud, Orsay.
1994 Ph. D in Computer Sciences of University Paris-Sud, Orsay
1990 Engineer degree of Télécom Paris.
1988 Master 1 in Electronics, Electrotechnics, Automatics, University of Paris Sud, Orsay

AWARDS

- 2020 **IMT-Académie des Sciences Grand prix.**
2017 « Chevalier de l'ordre des palmes académiques » (*Order of Academic Palms*)
2017 Fellow IEEE
2010 GdR-Isis/EEA/GRETSI's PhD award for former PhD student Nancy Bertin.
2006 Paris's Ph.D. Award for former PhD student Roland Badeau.
- 2021 Best video presentation at ISMIR 2021 for the paper: L. Prétet, G. Richard, G. Peeters. "*Is There a "Language of Music-Video Clips" ? A Qualitative and Quantitative Study*"
2018 Best Paper award, workshop NILM 2018 for the paper, S. Henriët, U. Simsekli, G. Richard, B. Fuentes, « Energy Disaggregation for Commercial Buildings: A Statistical Analysis », Austin, Tx, USA, 2018.
2012 Best paper award at AES convention for the paper: "N. Sturmel, A. Liutkus, J. Pinel, L. Girin, S. Marchand, G. Richard, R. Badeau and L. Daudet, (2012), Linear mixing models for active listening of music productions in realistic studio conditions, "132nd AES Convention", Budapest, Hungary.
2010 Best Young Researcher paper at CORESA2010 for the paper : C. Joder, S. Essid, and G. Richard, "Approche Hiérarchique pour un Alignement Musique-sur-partition efficace", In Proc. Compression et Représentation des Signaux Audiovisuels (CORESA), Lyon, France, October 2010.
2005 Best Paper award at CBMI'05 for the paper : O. Gillet and G. Richard, "Indexing and querying drum loops databases", International workshop on Content Based on Multimedia and Indexing (CBMI'05), Riga, Latvia, June 2005.

EXTERNAL COMMITTEES AND SCIENTIFIC CONSULTANCY

- 2021 - chair of the IEEE *Audio and Acoustic Signal Processing* technical committee
2019 - President of scientific council of EURECOM
2021 - Member of the scientific council of *Smart Impulse*
- 2018-2019 President of the evaluation committee CE23 : « Artificial Intelligence » of French Research Agency (ANR)
- 2018 Member of the HCERES evaluation committee of UMR STMS Lab (Ircam, Paris)
2018 Expert for Academy of Finland (review panel)
2017 Scientific consultancy for Deezer, S.A., France
2017 CREATE Research Laboratory evaluation committee, Aalborg, Denmark
2016 Senior Research promotion evaluation committee (Ircam, Paris)
2015 - Member of the EURASIP Special Area Team on *Acoustic, Sound and Music Signal Processing*

- 2010 - Member of the IEEE Audio and Acoustic Signal Processing Technical Committee
 2010 – 2015 Committee member, French Research Agency - CONTINT Programme
 1998 - Expert for the European Commission projects evaluation (FP6, FP7, H2020)
 2001 - Jury member of numerous PhD committees in France and Europe (UK, Finland, Sweden, Germany, Portugal, Italy, Denmark, Spain)
 2001- Jury member in “Habilitation to supervise research – HDR” in France (S. Marchand, L. Girin, M. Chetouani, N. Evans, G. Peeters, L. Oudre).

EDITING / REVIEWING

- 2022 - Senior Member of *IEEE Signal Processing Magazine* Editorial Board
 2017 Lead Guest editor of a special issue on “*Sound Scene and Event Analysis*” of the ACM/IEEE Transactions on Audio, Speech and Language Processing
 2013 Guest-editor of a special issue on “*Informed Acoustic Source separation*” of the EURASIP Journal on Advances in Signal Processing.
 2007 - 2011 Associate Editor of the IEEE Transactions on Audio, Speech and Language Processing
 2010-2011 Guest-Editor of the special issue on “*Music Signal Processing*” of IEEE Journal of Selected Topics in Signal Processing
 1994 - Regular reviewing for major conferences (Icassp, Eusipco, Ismir, Interspeech, Waspaa, ...)
 1996 - Regular reviewing for major journals (IEEE transactions, Eurasip journals ...)

CONFERENCE CHAIRS

- 2018 (Co-)General chair of the International Society for Music Information Retrieval (ISMIR) conference (ISMIR-2018)
 2015 (Co-)General chair of the IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA-2015)
 2013 (Co-)General chair of the International Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS-2013)
 2006 (Co-)General chair of the International Workshop on Acoustic Echo and Noise Control (IWAENC-2006)
 2018 Program (Co-)Chair pour le Workshop on Detection and Classification of Acoustic Scenes and Events (DCASE)
 2018 Area Chair Eusipco-2018 conference
 2017 Area chair for the IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA-2017)
 2013 Area Chair, *Analysis of Speech, Audio Signals, Speech Coding, Speech Enhancement* for Conference of the International Speech Communication Association (INTERSPEECH 2013)
 2013 - 2017 Area Chair, Audio and Acoustic Signal Processing for IEEE International Conference on Acoustics Speech and Signal Processing (ICASSP)

CONFERENCE TUTORIALS AND KEYNOTE TALKS

- 2021 Consensus and panel talk at Interdisciplinary workshop on AI “*What is beyond AI today*”, Palaiseau, France
 2019 conference talk, “*Machine listening: l'intelligence artificielle pour les sons et la musique*”, Colloque IMT – AI at the heart of industrial transformations, Paris, France.
 2019 Panel at workshop IANP2019 “AI : New powers”, April 2019, CNAM, Paris
 2018 Panel moderator at the University Franco-Italian congress on *Challenges of Artificial intelligence*, november 2018, Paris.
 2016 Keynote talk on *Acoustic Scene and Events Recognition: How Similar is it to Speech Recognition and Music Genre Recognition?* at “International Workshop on Detection and Classification of Acoustic Scenes and Events(DCASE2016)”, Budapest, Hungary.
 2015 Keynote talk on “Melody Extraction from music signals: “blind” and “informed” approaches” at 5th International Workshop on Folk Music Analysis (FMA 2015), Paris, France

- 2014 Keynote talk on “Informed Audio Source Separation” at the AES 53rd Conference on Semantic Audio, London, UK.
- 2014 Keynote talk on “Melody Extraction from Polyphonic Music Signals” at the International Workshop on Acoustic Echo and Noise Control (IWAENC 2014), Nice, France.
- 2012 Keynote talk on “Audio and Multimedia Music Signals Indexing” at the International Workshop on Image Analysis for Multimedia Interactive Services (WIAMIS-2012), Dublin, Ireland.
- 2010 Keynote talk on “Polyphonic music signals indexing” at Journées d’Informatique Musicale (JIM 2010), Rennes, France.;
- 2007 Keynote talk on “Recent advances in Digital Music Processing and Indexing” at Digital Music Research Network (DRMN+2), London , UK.
- 2014 Tutorial with A. Ozerov and A. Liutkus on “Informed Source separation” at the IEEE International Conference on Acoustics Speech and Signal Processing (ICASSP 2014), Florence, Italy
- 2011 Tutorial on “Multimedia Music Signal Processing” at the ACM Multimedia conference, Scottsdale, US.

Recent invited talks

- 2021 “Deep Neural Network for Audio and Music Transformations”, DataScience and Statistics workshop at University ParisSaclay, Orsay, France
- 2020 “Analysis, transformation and recognition of audio signals”, National Academy of Science, Paris, France
- 2020 “Machine listening: Artificial intelligence for sounds and music”, Webinar at SONOS.
- 2019 New Frontiers in Music Information Processing (MIP-Frontiers) a focus of some ongoing projects”, Fraunhofer, Erlangen, Germany
- 2017 “Traitement des signaux numériques”, Rencontre Scientifique Innovation, PSA, Vélizy
- 2015 “Melody Extraction from Music Signals: “Blind” to “Informed” Approaches”, New York University, US.
- 2014 “A view on Greedy pursuits algorithms for representing audio signals”, Mitsubishi Electric Research Laboratories, Boston, US.
- 2014 Invited talk on “Informed Audio Source Separation” at the Speech and Audio in the Northeast workshop (SANE), Boston, US.
- 2013 « Should Computational Audio processing systems have ears and brain ?”, Stimulus talk at Dagstuhl Seminar on “Computational audio analysis”
- 2013 “Some research in Audio, Music and Multimodal Signal Processing”, Fraunhofer Institute, Ilmenau, Germany
- 2012 “Greedy pursuits algorithms for representing audio signals: with applications to Compression, Source separation and Audio Fingerprint”, Berkeley University, US
- 2012 “Audio Processing Research and Technologies”, Korea University, Seoul, Korea.
- 2012 “Greedy pursuits algorithms for representing audio signals: with applications to Compression, Source separation and Audio Fingerprint”, University of California at Los Angeles, US
- 2012 “Research in audio Processing”, Technical University of Berlin, Germany
- 2011 “Multimodal Music Processing”, Dagstuhl Seminar, Germany
- 2010 “Research in audio Processing”, IRCAM, Paris, France
- 2010 “Transcription and Separation of the main melody”, Queen Mary University, London, UK
- 2009 “Beyond the bag-of frames approach for musical instrument recognition”, Aalborg University, Denmark.
- 2009 “Beyond the bag-of frames approach for musical instrument recognition”, Dublin City University, Ireland.
- 2009 “Beyond the bag-of frames approach for musical instrument recognition”, INESC Porto, Portugal.
- 2008 “Recent advances in Digital Music Processing and Indexing”, Acoustics’08 warm up, Paris, France
- 2008 “Novel approaches for musical instrument recognition”, Tampere University, Finland
- 2007 “Audio signal indexing”, Enterface’07 workshop, Istanbul, Turkey
- 2007 “Transcription and separation of drum signals from polyphonic music”, Enterface’07 workshop, Istanbul, Turkey

- 2007 “Audio signal indexing: Application to drum track separation and transcription”, Cambridge University, UK.
- 2007 “Audio signal indexing: Application to drum track separation and transcription”, Stanford University, US.
- 2006 “Drum signal processing and tempo extraction for Audio indexing”, University Pompeu Fabra, Barcelona, Spain.
- 2005 “Tempo extraction for Audio indexing”, Columbia University, New York, USA.
- 2005 “Musical instruments recognition and tempo extraction for Audio indexing”, CAIP center, Rutgers University, US.
- 2005 « Indexation des signaux audiofréquences :vue d'ensemble (in French) », Workshop of the French Acoustical Society, Paris, France.

Public Engagement

- 2019 Gaël Richard, Sébastien Fenet, Yves Grenier, “De Fourier à reconnaissance musicale”, Revue Interstices, Fev. 2019, online at: <https://interstices.info/de-fourier-a-la-reconnaissance-musicale/> (in French)
- 2008 Experimental conference with B. David at *Espace des Sciences Pierre Gilles de Gennes*, « Does the computer has the sense of rhythm and melody ? », ESPCI, Paris.
- 2004 Participation to the “Fête de la Science”, with a stand on « From rythme to music » at Cité des Science et de l'industrie (Museum), Paris, France. Broadcast on France Culture.

Some teaching courses

(between 90h to 220h teaching per year)

- 2020- Course on *Audio and music information retrieval (AMIR)*, Master DataScience, Institut polytechnique of Paris.
- 2007- Course in audio signal processing, Master MVA, ENS Cachan, Telecom Paris
- 2003- Course in audio signal processing, Master ATIAM, University Pierre et Marie Curie, Telecom Paris
- 2011-2014 Tutorship of Large-scale collaborative projects (Bachelor level).
- 2004-2014 Course in speech and Audio signal processing, Master IMA, University Pierre et Marie Curie, Telecom Paris
- 2001 -2015 Course in signal processing at Telecom Paris
- 2001-2015 Course in Speech and Audio Signal processing at Telecom Paris

Main research grants / contracts

- 2020-2023 Research collaboration with Thales on *Complex valued representation for deep learning : application to audio signals*, xx k€ (amount on request) with G. Peeters.
- 2019-2022 Research collaboration with Creaminal on *Analysis and Multimodal machine learning for audio/video mastering*, xx k€ (amount on request) with G. Peeters.
- 2018-2022 European Training Network MIP-Frontiers (*New Frontiers in Music Information Processing*) 1 051k€ pour Télécom Paris
- 2018-2021 Research collaboration with DEEZER on *Automatic singing voice transcription*, 48 k€ for Telecom Paris, with F. d'Alché-Buc.
- 2017-2020 Research collaboration with car manufacturer PSA on “Speech intelligibility improvement in cars”, 70 k€ for Telecom Paris, with B. David.
- 2016-2020 International project ANR/Tubitak FBIMATRIX on “*Parallel and Distributed Markov Chain Monte Carlo for Bayesian Inference in Matrix and Tensor Factorization Models*”, 184 k€ for Telecom Paris, with U. Simsekli.
- 2016-2019 Research collaboration contract with Smart Impulse on *electric source separation*, xx k€ (amount on request).
- 2014-2018 European Project FP7-LASIE (*Large Scale Information Exploitation of Forensic Data*), 420 k€ for Telecom Paris, with S. Essid.

- 2014-2017 National Digiteo/Digicosme project, (*Expert knowledge for audio and musical signals*), 120 k€ for Telecom Paris with M. Kowalski (University Paris-Sud), H. Papadopoulos (CNRS).
- 2016 Research Collaboration contract with Technicolor, 45 k€ with S. Essid.
- 2013-2017 National Project ANR-AIDA (*Intelligible Car for Hearing Impaired*), 95 k€ for Telecom Paris.
- 2013-2016 Marie Curie International Outgoing Fellowships (IOF) program, (*Statistical models for musical signal processing*).
- 2013-2017 National Project ANR-Edison3D (*Editing and Rendering for next generation of 3D sound*), 458k€ for Telecom Paris.
- 2015 Futur & Ruptures project (*Deep Learning for Multiple Instrument Identification in Recorded Music*), 50k€.
- 2011-2015 European Project FP7-REVERIE (*REal and Virtual Engagement in Realistic Immersive Environments*), 604 k€ for Telecom Paris with S. Essid.
- 2011 Research Collaboration contract with Arkamys, 45 k€ with Y. Grenier
- 2011-2013 European FP7-Support Action, (*Towards Excellence in Media Computing and Communication*), 25 k€ for Telecom Paris.
- 2011 Research Collaboration contract with Audionamix, 15 k€
- 2010-2013 European Network of Excellence FP7-3DLife (*Bringing the Media Internet to Life*), 415 k€ for Telecom Paris with S. Essid.
- 2009-2013 National Project ANR-DREAM (*Active Music Listening*), 140k€ pour Telecom Paris.
- 2008-2013 French-German project QUAERO (*Multimedia document retrieval*), 800 k€ for Telecom Paris.
- 2007-2009 National project Infom@gic (*Audio indexing and Retrieval*), 75 k€ for Telecom Paris.
- 2006 Research Collaboration contract with RTL, 45 k€ for Telecom Paris.
- 2006-2008 European Network of Excellence FP6-K-SPACE (*Knowledge Space of Semantic Inference for Automatic Annotation and Retrieval of Multimedia Content*), 310 k€ for Telecom Paris.
- 2005-2007 National project ACI Big Data Musicdiscover (*Music Information Retrieval and Discovery*), 75 k€ for TelecomParis
- 2004 Research Collaboration contract with Thales and LIMSI, 20 k€ for Telecom Paris
- 2001-2002 National project RNRT-COHRAINTE (*Robust and Scalable coding of audiovisual sources with applications to Internet*), 100 k€ for Telecom Paris
- 2001-2004 European Project FP5-IST- JOCO (*JOint source-channel COding-driven digital baseband design for 4G multimedia streaming*), 500 k€ for Philips.
- 2000-2003 European Project FP5-IST- INTERFACE (*Multimodal analysis/synthesis systEm for human INTERAction to virtual and augmented environments*), approx.. 200k€ for Matra-Nortel (*project transferred*)
- 2000-2003 European Project FP5-IST-BANCA (*Biometric Access Control for Networked and e-Commerce Applications*), 500 k€ for Matra Nortel (*project transferred*)

PhD students graduated (40 graduated, 4 ongoing)

- 2021- D. Perera, « Generative modelling and few-shot learning for audio scene analysis », co-supervised with S. Essid.
- 2020- F. Mathieu, « Complex valued representation for deep learning : application to audio signals », with main supervisor G. Peeters, collaboration with company Thales.
- 2019- L. Pretet, « *Analysis and Multimodal machine learning for audio/video mastering* », co-supervised with G. Peeters (Télécom Paris) collaboration with company Creaminal.
- 2018- J. Nistal, « Conditional generation of audio using deep learning: application to music production », co-supervised with S. Lattner (Sony).
- 2018-2021 G. Cantisani, « Multimodal music recording separation and remixing », co-supervised with S. Essid (Télécom Paris), collaboration with Technicolor
- 2018-2021 K. Schulze-Forster, « Text-Informed Lead Vocal Extraction », co-supervised with R. Badeau (Télécom Paris), C. Doire (Audionamix)
- 2018-2021 K. Ibrahim, « Audio Content and Context in Music Recommendation », co-supervised with G. Peeters (Télécom Paris), J. Royo Letellier and F. Lesaint (Deezer),
- 2018-2021 O. Cifka, « Context-Driven Music Transformation », co-supervised with Umut Simsekli (Telecom Paris), collaboration with Technicolor.
- 2018-2021 Andréa Vaglio, « *Automatic singing voice transcription* », co-supervised with F. d'Alché-Buc, R. Hennequin (Deezer), M. Moussallam (Deezer)
- 2017-2021 E. Gentet, « *Increasing intelligibility of speech for automotive applications*, co-supervised with B. David (Telecom Paris) and V. Roussarie (PSA)

- 2017-2021 Thanh-Huy Nguyen, “*Parallel and Distributed Markov Chain Monte Carlo for Bayesian Inference in Matrix and Tensor Factorization Models*”, co-supervised with U. Simsekli (Telecom Paris)
- 2017-2020 S. Henriët, « *Analysis and separation of electricity power curves* », co-supervised with U. Simsekli (Telecom Paris) et B. Fuentes (Smart Impulse)
- 2016-2019 S. Parekh, « *Models for audiovisual objects discovery, localization and extraction* », co-supervised with S. Essid (Telecom Paris), A. Ozerov (Technicolor)
- 2014-2018 V. Bisot, « *Multimodal analysis and indexing of complex urban scenes* », co-supervised with S. Essid (Telecom Paris)
- 2014-2018 T. Jansoone, « *Multimodal analysis and recognition of social signals : application to the synthesis of social attitudes of an animated agents* », Co-supervised with C. Clavel (Telecom Paris), K. Bailly (University Pierre and Marie Curie).
- 2014-2017 S. Leglaive, « *Under-determined audio source separation in reverberant environment* », co-supervised with R. Badeau (Telecom Paris).
- 2014-2017 C. Laroche, « *Sparse approaches for music transcription* », co-supervised with H. Papadopoulos (CNRS), M. Kowalski (University Paris-Sud)
- 2013-2017 S. Durand, “*Automatic music transcription*”, Co-supervised with B. David (Telecom Paris)
- 2012-2016 A.C Conneau, “*Dynamic identification of emotional state by analysis of heterogenous biological signals* », co-supervised with S. Essid (Telecom Paris)
- 2012-2016 H. Bai, “*Hybrid models for sound reverberation*”, co-supervised with L. Daudet (University Paris 6).
- 2011-2015 X. Jaureguiberry, “*Fusion for audio source separation*”, co-supervised with E. Vincent (INRIA, Nancy).
- 2011-2015 A. Masurelle, “*Multimodal action and dance steps recognition*”, co-supervised with S. Essid (Telecom Paris)
- 2011-2014 N. Lopez, « *Monochannel approaches for speech dereverberation* », co-supervised with Y. Grenier (Telecom Paris).
- 2010-2013 S. Fenêt, “*Audio-Fingerprints and Associated Indexing Strategies for the Purpose of Large-Scale Audio-Identification*”, co-supervised with Y. Grenier (Telecom Paris).
- 2009-2013 R. Foucard, “*Multilevel fusion by boosting for automatic tagging*”, co-supervised with S. Essid (Telecom Paris)
- 2009-2013 B. Fuentes, “*Latent component probabilistic analysis and its adaptation to music signals. Application to automatic music transcription and source separation*” co-supervised with R. Badeau (Telecom Paris).
- 2010-2012 A. Liutkus, “*Gaussian processes for source separation and posterior source coding*”, co-supervised with R. Badeau (Telecom Paris).
- 2009-2012 M. Moussallam, “*Sparse and herarchical representations for archival and compression of audio scenes*”, co-supervised with L. Daudet (Univ. Paris 6).
- 2008-2011 S. Gulluni “*An interactive system for electro-acoustic music analysis*”, co-supervised with S. Essid (Telecom Paris), O. Buisson, E. Favreau (INA)
- 2007-2011 C. Joder, “*Audio-to-score temporal alignment with discriminative graphical models*”, co-supervised with S. Essid (Telecom Paris)
- 2007-2011 F. Vallet, “*Automatic structuring of TV talk shows*”, co-supervised with S. Essid (Telecom Paris), J. Carrive (INA).
- 2007-2010 J-L Durrieu, “*Automatic transcription and separation of the main melody in polyphonic music signals*”, co-supervised with B. David.
- 2006-2010 M. Ramona, “*Automatic classification of broadcast audio streams with Support Vector Machines*”, co-supervised with B. David.
- 2006-2009 V. Nguyen, “*Study of characteristics of the vietnamese language for its synthesis and its automatic recognition : Static and dynamic aspects*”, co-supervised with R. Carré (CNRS), E. Castelli (MICA, Vietnam).
- 2005-2009 N. Bertin, “*Non-negative matrix factorizations : constrained and probabilistic approaches and application to automatic transcription of polyphonic music*”, co-supervised with R. Badeau (Telecom Paris).
- 2005-2008 E. Ravelli, “*Audio signal representations with overcomplete transforms for coding and indexing*”, co-supervised with L. Daudet (Univ. Paris 6).
- 2004-2008 M. Betser, “*Sinusoidal modeling and applications to audio indexing*”, co-supervised with B. David (Telecom Paris) and P. Collen (Orange Labs).
- 2004-2007 P. Leveau, “*Structured sparse decomposition : application to object representation of music : signal models, algorithms and applications*”, co-supervised with L. Daudet (Univ. Paris 6).
- 2004-2007 C. Clavel, “*Acoustic analysis and recognition of fear-type emotions occuring in abnormal situations*, co-supervised with L. Devillers (Univ. ParisXI) and S. Sedogbo (Thales)
- 2003-2007 O. Gillet, “*Drum signal analysis : applications to music video analysis*”, Telecom Paris.

- 2002-2006 S. Essid, “Automatic classification of audio signals : machine recognition of musical instrument, Co-supervised with B. David (Telecom Paris)
- 2002-2006 M. Alonso, “Extraction of metrical information from acoustic music signals”, Co-supervised with B. David (Telecom Paris)
- 2001-2005 R. Badeau, “High resolution methods for estimating and tracking modulated sinusoids : Application to music signals, Co-supervised with B. David (Telecom Paris)

LIST OF PUBLICATIONS

270+ papers including 74 journal and book chapters, 11 patents and over 200 conference papers.
(9693 citations, h-number = 51, Source Google Scholar, Dec. 2021)

Journals/Book Chapter (74)

K. Schulze-Forster, C. Doire, G. Richard, R. Badeau Phoneme Level Lyrics Alignment and Text-Informed Singing Voice Separation, IEEE/ACM Transactions on Audio, Speech, and Language Processing, to appear, 2021

G. Peeters, G. Richard, Deep Learning for Audio and Music, published in Multi-faceted Deep Learning: Models and Data, edited by J. Benois-Pineau, A. Zemmari, 2021, Springer

Ondrej Cifka, Umut Simsekli, Gaël Richard, “Groove2Groove: One-Shot Music Style Transfer with Supervision from Synthetic Data”, IEEE/ACM Transactions on Audio, Speech, and Language Processing, vol. 28, pp. 2638-2650, 2020

Sanjeel Parekh, Slim Essid, Alexey Ozerov, Ngoc Q. K. Duong, Patrick Perez, Gaël Richard, “Weakly Supervised Representation Learning for Audio-Visual Scene Analysis”, IEEE/ACM Transactions on Audio, Speech, and Language Processing, dec. 2019

Simon Henriët, Umut Simsekli, Sergio Dos Santos, Benoit Fuentes, Gaël Richard, “Independent-Variation Matrix Factorization With Application to Energy Disaggregation”, IEEE Signal Processing Letters, Vol. 26, no. 11, November 2019

Zhiyao Duan, Slim Essid, Cynthia C. S. Liem, Gaël Richard, Gaurav Sharma, “Audio-Visual Analysis of Music Performances”, IEEE Signal Processing Magazine, vol. 36, no. 1, pp. 63-73, Jan. 2019.

Gaël Richard, Sébastien Fenêt, Yves Grenier, “De Fourier à reconnaissance musicale”, Revue Interstices, Fev. 2019, online at: <https://interstices.info/de-fourier-a-la-reconnaissance-musicale/> (in French)

C Clément Laroche, Matthieu Kowalski, Hélène Papadopoulos and Gaël Richard, (2018), "Hybrid Projective Nonnegative Matrix Factorization with Drum Dictionaries for Harmonic/Percussive Source Separation", ACM/IEEE Transactions on Audio, Speech and Language Processing.Simon Leglaive, Vol. 26 (9), pp. 1499-1511, Sept. 2018

Thanh Huy Nguyen; Umut Şimşekli; Gaël Richard; Ali Taylan Cemgil, “Efficient Bayesian Model Selection in PARAFAC via Stochastic Thermodynamic Integration”, IEEE Signal Processing Letters, April 2018

- Simon Henriët, Umut Simsekli, Benoit Fuentes, Gaël Richard, (2018), "A Generative Model for Non-Intrusive Load Monitoring in Commercial Buildings", Volume 177, Oct. 2018, Pages 268-278 (a former version on arxiv).
- Simon Leglaive, Roland Badeau and Gaël Richard, (2018), "Student's t Source and Mixing Models for Multichannel Audio Source Separation", IEEE Transactions on Audio, Speech and Language Processing, vol. 26, n° 5, pp. 1 15, 2018.
- B. Pardo, A. Liutkus, Z. Duan, G. Richard, Applying source separation to music; in Audio Source Separation and Speech Enhancement, E. Vincent, T. Virtanen, S. Gannot, Eds., Wiley International, 2018.
- R. Serizel, V. Bisot, S. Essid, G. Richard, Acoustic Features for Environmental sound Analysis, in Computational Analysis of Sound Scenes and Events, T. Virtanen, D. Ellis, M. Plumbley Eds., Springer International Publishing AG, 2017. pp 71-101, 2018.
- K. Nathwani, G. Richard, B. David, P. Prablanc, V. Roussarie, Speech Intelligibility Improvement in Car Noise Environment by Voice Transformation, Speech Communication, May 2017.
- T. Janssoone, C. Clavel, K. Bailly et G. Richard, "Règles d'associations temporelles de signaux sociaux pour la synthèse d'un Agent Conversationnel Animé: Application aux attitudes sociales", Revue d'Intelligence Artificielle (in French). 2017.
- V. Bisot, R. Serizel, S. Essid, G. Richard, "Feature Learning with Matrix Factorization Applied to Acoustic Scene Classification", IEEE/ACM Transactions on Audio, Speech, and Language Processing, Special Issue on Sound Scene and Event Analysis, June 2017.
- S. Fenet, R. Badeau, G. Richard, "Reassigned Time-Frequency Representations of Discrete Time Signals and Application to the Constant-Q Transform", Signal Processing, 132 (2017) 170–176.
- S Durand, J. Bello, S. Leglaive, B. David, G. Richard, "Robust Downbeat Tracking Using an Ensemble of Convolutional Networks", IEEE/ACM Transactions on Audio, Speech, and Language Processing, 2016 (accepted)
- S. Leglaive, R. Badeau, G. Richard, "Multichannel Audio Source Separation with Probabilistic Reverberation Priors", IEEE/ACM Transactions on Audio, Speech, and Language Processing, Vol. 24, no. 12, December 2016
- X. Jaureguiberry, E. Vincent and G. Richard, (2016), "Fusion methods for speech enhancement and audio source separation", ACM/IEEE Transactions on Audio, Speech and Language Processing.
- A. Masurelle, A. Rida Sekkat, S. Essid, G. Richard, « TPT-Dance&Actions : un corpus multimodal d'activités humaines », Revue Traitement du signal – no 4/2015, pp. 443-475.
- H. Bai, G. Richard, L. Daudet "Late Reverberation Synthesis: From Radiance Transfer to Feedback Delay Networks", IEEE/ACM Transactions on Audio, Speech, and Language Processing, 2015 vol. 23, n° 12, pp. 2260 - 2271.
- J. Salomon, E. Gomez, D. Ellis, G. Richard, "Melody Extraction from Polyphonic Music Signals: Approaches, Applications and Challenges", IEEE Signal Processing magazine, Vol 31, Issue 2, pp 118-134, March 2014
- M. Moussallam, A. Gramfort, L. Daudet, G. Richard, "Blind Denoising with Random Greedy Pursuits", IEEE Signal Processing letters, Vol. 21, N° 11, Nov. 2014
- C. Joder, S. Essid, G. Richard, "Learning Optimal Features for Polyphonic Audio-to-Score Alignment," Audio, Speech, and Language Processing, IEEE Transactions on , vol.21, no.10, pp.2118,2128, Oct. 2013
- G. Richard, S. Sundaram, S. Narayanan "An overview on Perceptually Motivated Audio Indexing and Classification", Proceedings of the IEEE, 2013.

B. Fuentes, R. Badeau et G. Richard, (2013), "Harmonic Adaptive Latent Component Analysis of Audio and Application to Music Transcription", *IEEE Transactions on Audio, Speech and Language Processing*, Vol 21, N°9, Sept. 2013

O. Derrien, R. Badeau, G. Richard, "A Parametric Audio Coding with Exponentially Damped Sinusoids", *IEEE Transactions on Audio, Speech and Language Processing*, Vol 21, N° 7, July 2013.

A. Ozerov, A. Liutkus, R. Badeau et G. Richard, "Coding-based Informed Source Separation: Nonnegative Tensor Factorization Approach. *IEEE Transactions on Audio, Speech and Language Processing*, Vol 21, N°8, Aout 2013.

M. Ramona, G. Richard, B. David "Multiclass Feature Selection with Kernel Gram-matrix-based criteria", *IEEE Transactions on Neural Networks and Learning Systems*, vol.PP, no.99, pp.1, 0 doi: 10.1109/TNNLS.2012.2201748

A. Liutkus, J. Pinel, R. Badeau, L. Girin and G. Richard, Informed source separation through spectrogram coding and data embedding, *Signal Processing*, August 2012, vol. 92, n° 8, pp. 1937-1949

S. Essid, G. Richard, "Fusion of Multimodal Information in Music Content Analysis", in *Multimodal Music Processing, Dagstuhl Follow-Ups*, Ed. M. Muller, M. Goto, M. Schedl, Schloss Dagstuhl--Leibniz-Zentrum fuer Informatik, 2012

F. Vallet, S. Essid, J. Carrive and G. Richard, High-level TV talk show structuring centered on speakers' interventions, In book: *TV Content Analysis: Techniques and Applications*, Y. Kompatsiaris, B. Meriardo and S. Lian (Eds.), CRC Press, Taylor Francis LLC, 2012.

M. Moussallam, L. Daudet, G. Richard, "Matching pursuits with random sequential subdictionaries", *Signal Processing*, 2012, <http://dx.doi.org/10.1016/j.sigpro.2012.03.019>

S. Essid, X. Lin, M. Gowing, G. Kordelas, A. Aksay, P. Kelly, T. Fillon, Q. Zhang, A. Dielmann, V. Kitanovski, R. Tournemene, A. Masurelle, E. Izquierdo, N. E. O'Connor, P. Daras, G. Richard, "A multi modal dance corpus for research into interaction between humans in virtual environments", *Journal on Multimodal User Interfaces*, 2012,7 (1-2). pp. 157-170. ISSN 1783-7677.

A. Liutkus, J. Pinel, R. Badeau, L. Girin, G. Richard, Informed source separation through spectrogram coding and data embedding, *Signal Processing*, September 2011.

P. Dymarski, N. Moreau, G. Richard, Greedy sparse decompositions: A comparative study, *EURASIP Journal on Advances in Signal Processing*, 2011:34

J-L Durrieu, B. David, G. Richard, A musically motivated mid-level representation for pitch estimation and musical audio source separation, *IEEE Journal on Selected Topics in Signal Processing*, October 2011.

M. Mueller, D. Ellis, A. Klapuri, G. Richard, "Signal Processing for Music Analysis", *IEEE Journal on Selected Topics in Signal Processing*, October 2011.

C. Joder, S. Essid, G. Richard, A Conditional Random Field Framework for Robust and Scalable Audio-to-Score Matching, *IEEE Transactions on Audio, Speech and Language Processing*, vol.19, no.8, pp.2385-2397, Nov. 2011.

A. Liutkus, R. Badeau, G. Richard, Gaussian Processes for Underdetermined Source Separation, *IEEE Transactions on Signal Processing*, vol.59, no.7, pp.3155-3167, July 2011.

R. Benmokhtar, B. Huet, G. Richard, T. Declerck and S. Essid, Feature Extraction for Multimedia Analysis, Chapitre 4., *Multimedia Semantics: Metadata, Analysis and Interaction*, Ed. Wiley, 2011.

S. Essid, M. Campedel, G. Richard, T. Piatrik, R. Benmokhtar and B. Huet Machine Learning Techniques for Multimedia Analysis. Chapitre 5., *Multimedia Semantics: Metadata, Analysis and Interaction*, Ed. Wiley, 2011.

- J-L Durrieu, G. Richard, B. David, C. Févotte, Source/Filter Model for Unsupervised Main Melody Extraction From Polyphonic Audio Signals, *IEEE Transactions on Audio, Speech and Language Processing*, Vol. 18, No 3, March 2010, pp564-575.
- C. Clavel, G. Richard, "Reconnaissance acoustique des émotions", Chapter 5 in *Systèmes d'Interaction Emotionnelle*, Editor: C. Pelachaud, Hermès, 2010 (in French).
- E. Ravelli, G. Richard, L. Daudet, Audio signal representations for indexing in the transform domain, *IEEE Transactions on Audio, Speech and Language Processing*, Vol. 18, No 3, March 2010, pp 434- 446
- M. Lagrange, M. Raspaud, R. Badeau, G. Richard, "Explicit modeling of temporal dynamics within musical signals for acoustical unit similarity," *Pattern Recognition Letters*, Sept. 2009.
- C. Joder, S. Essid, G. Richard, Temporal integration for audio classification with application to musical instrument classification, *IEEE Transactions on Audio, Speech and Language Processing*, Vol. 17, N° 1, pp 174-186, Jan. 2009
2008
- E. Ravelli, G. Richard, L. Daudet, Union of MDCT bases for audio coding, *IEEE Transactions on Audio, Speech and Language Processing*, Vol. 16, Issue 8, pp 1361-1372, Nov. 2008.
- O. Derrien and G. Richard, A new model-based algorithm for optimizing the MPEG-AAC in MS-stereo, *IEEE Transactions on Audio, Speech and Language Processing*, Vol. 16, Issue 8, 1373-1382, Nov. 2008.
- C. Clavel, I. Vasilescu, L. Devillers, G. Richard, T. Ehrette Fear-type emotion recognition for future audio-based surveillance systems, *Speech Communication*, Vol 50 (2008), pp. 487–503.
- G. Richard, Audio Indexing, *Encyclopedia of Data Warehousing and Mining*, Second Edition. Information Science Reference - IGI Global, 2008.
- R. Badeau, B. David and G. Richard, Fast and stable YAST algorithm for principal and minor subspace tracking, *IEEE Transactions on Signal Processing*, vol. 56, no. 8, pp. 3437-3446, août 2008.
- R. Badeau, B. David and G. Richard, Cramer-Rao bounds for multiple poles and coefficients of quasipolynomials in colored noise, *IEEE Transactions on Signal Processing*, vol. 56, no. 8, pp. 3458-3467, août 2008
- P. Leveau, E. Vincent, G. Richard, L. Daudet, Instrument-Specific Harmonic Atoms for Mid-Level Music Representation, *IEEE Transactions on Audio, Speech and Language Processing*, Volume 16, N°1 Jan. 2008
Page(s):116 - 128.
- O. Gillet and G. Richard, Transcription and Separation of Drum Signals From Polyphonic Music . *IEEE Transactions on Audio, Speech and Language Processing*, Volume 16, N° 3, March 2008
Page(s):529 - 540.
- R. Badeau, B. David and G. Richard, "Performance of ESPRIT for Estimating Mixtures of Complex Exponentials Modulated by Polynomials, *IEEE Transactions on Signal Processing*, Vol. 56, N° 2, February 2008, Page(s):492 - 504.
- M. Betser, P. Collen, G. Richard and B. David « Estimation of frequency for AM/FM models using the phase vocoder framework», *IEEE Transactions on Signal Processing*, Vol. 56, N° 2, February 2008., Page(s):505 - 517.
- O. Gillet, S. Essid and G. Richard, On the Correlation of Audio and Visual Segmentations of Music Videos. *IEEE Transactions on Circuits and Systems for Video Technology*, 17 (2), March 2007, pp 347-355.
- M. Alonso, G. Richard and B. David, "Tempo estimation for audio recordings", *Journal of New Music Research*, Vol 36, N° 1, March 2007.
- M. Alonso, G. Richard and B. David, "Accurate tempo estimation based on harmonic+noise decomposition", *EURASIP Journal on Advances in Signal Processing*, vol. 2007, Article ID 82795, 14 pages, 2007

S. Essid, G. Richard and B. David, "Musical Instrument Recognition by pairwise classification strategies", IEEE Transactions on Speech, Audio and Language Processing, Volume 14, Issue 4, July 2006 Page(s):1401 - 1412.

C. Clavel, I. Vasilescu, G. Richard and L. Devillers, « Du corpus émotionnel au système de détection : le point de vue applicatif de la surveillance dans les lieux publics », (RIA06), Revue en Intelligence Artificielle RIA, édition spéciale « Interaction Emotionnelle, 2006.

O. Derrien, P. Duhamel, M. Charbit et G. Richard, "A new quantization optimization algorithm for the MPEGAdvanced Audio Coder using a statistical sub-band model of the quantization noise" IEEE Transactions on Speech, Audio and Language Processing, Volume 14, Issue 4, July 2006 Page(s):1328 - 1339

S. Essid, G. Richard and B. David, Instrument Recognition in Polyphonic Music Based on Automatic Taxonomies, IEEE Transactions on Speech, Audio and Language Processing, Volume 14, Issue 1, Jan. 2006 Page(s):68 - 80

R. Badeau, B. David and G. Richard, "A new perturbation analysis for signal enumeration in rotational invariance techniques", IEEE Transactions on Signal Processing, Volume 54, Issue 2, Feb. 2006 Page(s):450 - 458

R. Badeau, B. David and G. Richard, "High resolution spectral analysis of mixtures of complex exponentials modulated by polynomials", IEEE Transactions on Signal Processing, Volume 54, Issue 4, April 2006 Page(s):1341 - 1350

R. Badeau, B. David and G. Richard, "Fast Approximated Power Iteration Subspace Tracking", IEEE Transactions on Signal Processing, Volume 53, Issue 8, Part 1, Aug. 2005 Page(s):2931 - 2941

O. Gillet et G. Richard, "Drum loops retrieval from spoken queries", Journal of Intelligent Information Systems - Special issue on Intelligent Multimedia Applications, vol. 24, n° 2/3, pp. 159-177, March 2005

R. Badeau, G. Richard et B. David, Sliding window adaptive SVD algorithms, IEEE Transactions on Signal Processing, Volume 52, Issue 1, Jan 2004 Page(s):1 - 10
2003

G. Richard et O. Cappé, "Synthèse de la parole à partir du texte", Collection Techniques de l'ingénieur, Paris, 2003.

Van den Heuvel H., Boves L., Moreno A., Omologo M., Richard G., Sanders E., "Annotation in the speechdat projects", International Journal of Speech Technology, 4, pp. 127-143., 2001.

G. Richard, C. d'Alessandro, "Analysis/synthesis and modification of the speech aperiodic component", Speech Communication, Volume 19, Issue 3, September 1996, Pages 221-244

Richard G., d'Alessandro C., (1997). "Modification of the aperiodic component of speech signals for synthesis", chapter in Progress in Text-To-Speech synthesis, J.P.H. Van Santen, R.W. Sproat, J.P. Olive and J. Hirschberg, eds., Springer-Verlag, New-York

Theses (2)

Habilitation à diriger des recherches

Richard G. (2001). «Codage et Interfaces homme-machine », Habilitation à diriger des recherches de l'université Paris-XI, Orsay, Sept. 2001 – Part II :Mémoire (in French).

Ph.D. Thesis

Richard G., (1994). "Modélisation de la composante stochastique de la Parole" , thèse de Doctorat de l'Université Paris-XI, Orsay, 8 avril (in French)

Patents (11)

E. Gentet, S. Denjean, V. Roussarie, B. David, G. Richard, "Conversion de la parole par apprentissage statistique avec modélisation complexe des modifications temporelles", Brevet n° FR3106691 – 2021

S. Parekh, S. Essid, A. Ozerov, Q.K.N Duong, P. Perez and G. Richard, Method for audio visual events classification and localization and corresponding apparatus computer readable program product and computer readable storage medium, Application n° 180049, 2018

S. Parekh, A. Ozerov, Q. Duong, G. Richard, S. Essid, P. Perez, "Method for Processing an input audio signal and corresponding electronic device, , Application 173305456.0 - 1914 (2017)

N. Lopez, Y. Grenier, G. Richard , « Procédé de suppression de la réverbération tardive d'un signal sonore », WO2015011078 A1, 2015

S. Fenet, Y. Grenier, G. Richard, « Génération d'une Signature d'un Signal Audio Musical », WO2014131984 A2 ; 2013

L. Girin, Antoine Liutkus, G. Richard et R. Badeau, (2010), Procédé et dispositif de formation d'un signal mixé numérique audio, procédé et dispositif de séparation de signaux, et signal correspondant, Rapport de recherche, n° B10/3035FR, pp. 36.

R. Badeau, G. Richard and B. David, "Procédé de poursuite d'un sous-espace de dimension inférieure à celle des vecteurs de données, notamment audio", Brevet d'invention n° 05 50678. 2005

Murgia C., Richard G., Lockwood P., "Procédés de codage, de décodage et de transcodage", Brevet d'invention n° FR9903314, publié le 22/09/2000 sous le numéro FR2791166.

Murgia C., Richard G., Lockwood P., "Procédés de codage, de decodage et de transcodage audio", Brevet d'invention n° FR9903323, publié le 22/09/2000 sous le numéro FR2791167.

Richard G., Murgia C., Le Doré A., Lockwood P., "Codeur Audio", Brevet d'invention n° 9708784, Bulletin officiel de la propriété industrielle n° 99/37, 17.09.99 (n° de publication : 2 766 032).

Richard G., Lockwood P, Capman F., Boudy J., "Procédé et système de restitution sonore à effet spatial, et terminal de téléphone incorporant un tel système", Brevet d'invention n° FR9909243, publié le 02/02/2001 sous le n°FR2797132.

Conference Papers (215)

M. Barsbey, M. Sefidgaran, M. Erdogdu, G. Richard, Umut Şimşekli. "Heavy Tails in SGD and Compressibility of Overparametrized Neural Networks" 35th Conference on Neural Information Processing Systems (NeurIPS), Dec 2021, Online, United States.

A. Vaglio, R. Hennequin, M. Moussallam, G. Richard. "The words remain the same: cover detection with lyrics transcription" 22nd International Society for Music Information Retrieval Conference (ISMIR), Nov 2021, Online, India.

L. Prétet, G. Richard, G. Peeters. "Is There a "Language of Music-Video Clips" ? A Qualitative and Quantitative Study" 22nd International Society for Music Information Retrieval Conference (ISMIR), Nov 2021, Online, India. **Best video presentation award**

Javier Nistal Stefan Lattner Gaël Richard. "DarkGAN: Exploiting Knowledge Distillation for Comprehensible Audio Synthesis With GANs" " 22nd International Society for Music Information Retrieval Conference (ISMIR), Nov 2021, Online, India.

A. Liutkus and O. Cifka and S. Wu and U. Simsekli and Y. Yang and G. Richard "Relative positional encoding for transformers with linear complexity" in Proc. of International Conference on Machine Learning (ICML) - Long paper presentation - 2021.

G. Cantisani, A. Ozerov, S. Essid, G. Richard. "User-guided one-shot deep model adaptation for music source separation. in IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA), 2021.

J. Nistal, C. Aouameur, S. Lattner, G. Richard, "VQPC-GAN: Variable-Length Adversarial Audio Synthesis Using Vector-Quantized Contrastive Predictive Coding" in IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA), 2021

G. Cantisani, S. Essid and G. Richard, "Neuro-Steered Music Source Separation With EEG-Based Auditory Attention Decoding And Contrastive-NMF" in Proc. of International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2021.

L. Pr  tet, G. Richard, G. Peeters. "Cross-Modal Music-Video Recommendation: A Study of Design Choices." Special Session of the International Joint Conference on Neural Networks (IJCNN 2021),

O. Cifka, A. Ozerov, U. Simsekli, G. Richard, "Self-Supervised VQ-VAE for One-Shot Music Style Transfer" in Proc. of International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2021.

J. Nistal, S. Lattner, and G. Richard, "Comparing representations for audio synthesis using generative adversarial networks," in Proc. of the 28th European Signal Processing Conference, EUSIPCO2020, Amsterdam, NL, Jan. 2021.

J. Nistal, S. Lattner and G. Richard, "DrumGAN: Synthesis of Drum Sounds With Timbral Feature Conditioning Using Generative Adversarial Networks" in Proc. of the International Society for Music Information Retrieval (ISMIR), Oct. 2020 (preprint).

A. Vaglio, R. Hennequin, M. Moussallam, G. Richard, F. d'Alch  -Buc "Multilingual Lyrics-to-Audio alignment" in Proc. of the International Society for Music Information Retrieval (ISMIR), Oct. 2020

Karim Ibrahim, Elena Epure, Geoffroy Peeters, Gael Richard "Should we consider the users in contextual music auto-tagging models?" in Proc. of the International Society for Music Information Retrieval (ISMIR), Oct. 2020

Karim Ibrahim, Elena Epure, Geoffroy Peeters, Gael Richard "Confidence-based Weighted Loss for Multi-label Classification with Missing Labels." The 2020 International Conference on Multimedia Retrieval (ICMR '20), Jun 2020, Dublin, Ireland.

E. Gentet, B. David, S. Denjean, G. Richard, V. Roussarie "Speech intelligibility enhancement by equalization for in-car applications" Proc. of International Conference on Acoustics, Speech and Signal Processing (ICASSP), May 2020, Barcelona, Spain

E. Gentet, B. David, S. Denjean, G. Richard, V. Roussarie "Neutral-to-Lombard speech conversion with deep learning" Proc. of International Conference on Acoustics, Speech and Signal Processing (ICASSP), May 2020, Barcelona, Spain

L. Pr  tet, G. Richard, G. Peeters "Learning to rank music tracks using triplet loss" Proc. of International Conference on Acoustics, Speech and Signal Processing (ICASSP), May 2020, Barcelona, Spain

A. Vaglio, R. Hennequin, M. Moussallam, G. Richard, F. d'Alch  -Buc "Audio-Based detection of explicit content in music" Proc. of International Conference on Acoustics, Speech and Signal Processing (ICASSP), May 2020, Barcelona, Spain

K. Schulze-Forster, C. Doire, G. Richard, . Badeau, "Joint phoneme alignment and text-informed speech separation on highly corrupted speech" Proc. of International Conference on Acoustics, Speech and Signal Processing (ICASSP), May 2020, Barcelona, Spain

K.M. Ibrahim, J. Royo-Letelier, E. Epure, G. Peeters, G. Richard, "Audio-Based Auto-Tagging with contextual tags for music" Proc. of International Conference on Acoustics, Speech and Signal Processing (ICASSP), May 2020, Barcelona, Spain

T.H. Nguyen, U. Şimşekli, M. Gürbüzbalaban, G. Richard, "First Exit Time Analysis of Stochastic Gradient Descent Under Heavy-Tailed Gradient Noise" 33rd Conference on Neural Information Processing Systems (NeurIPS 2019), Dec 2019, Vancouver, Canada

O. Cifka, U. Şimşekli, G. Richard, "Supervised Symbolic Music Style Translation Using Synthetic Data" (preprint), in Proc. of ISMIR 2019, Delft, Netherlands

S. Parekh, A. Ozerov, S. Essid, N. Q. K. Duong, P. Pérez, G. Richard, "Identify, Locate and Separate: Audio-visual Object Extraction in Large Video Collections Using Weak Supervision", in Proc. of WASPAA, New Paltz, NY, USA, 2019

G. Cantisani, S. Essid, G. Richard, "EEG-based decoding of auditory attention to a target instrument in polyphonic music", in Proc. of WASPAA, New Paltz, NY, USA, 2019

K. Schulze-Forster, C. Doire, G. Richard, R. Badeau, "Weakly Informed Audio Source Separation", in Proc. of WASPAA, New Paltz, NY, USA, 2019

S. Henriët, U. Şimşekli, S. Dos Santos, B. Fuentes, G. Richard, "Factorisation Matricielle Semi Non-Négative: Application à la Décomposition de Consommations Electriques" (in French), in Proc. of GRETSI, Lille, France, 2019

G. Cantisani, G. Trgoat, S. Essid, G. Richard, "MAD-EEG: an EEG dataset for decoding auditory attention to a target instrument in polyphonic music", in Proc. of Speech, Music and Mind (SMM), Satellite Workshop of Interspeech 2019, Vienna, Austria, 2019

T. H. Nguyen, U. Şimşekli, G. Richard, "Non-Asymptotic Analysis of Fractional Langevin Monte Carlo for Non-Convex Optimization" (preprint), International Conference on Machine Learning (ICML), Long Beach, CA, USA, 2019

U. Şimşekli, Ç. Yildiz, T. H. Nguyen, G. Richard, A. T. Cemgil, "Asynchronous Stochastic Quasi-Newton MCMC for Non-Convex Optimization", **International Conference on Machine Learning (ICML)**, Stockholm, Sweden, 2018

Sanjeel Parekh, Slim Essid, Alexey Ozerov, Ngoc Q. K. Duong, Patrick Pérez, Gaël Richard, (2018), Weakly Supervised Representation Learning for Unsynchronized Audio-Visual Events, CVPR Workshop, Salt Lake City, US.

Umut Şimşekli, Halil Erdogan, Simon Leglaive, Antoine Liutkus, Roland Badeau and Gaël Richard, (2018), Alpha stable low rank plus residual decomposition for speech enhancement, "ICASSP", Calgary, Alberta, Canada.

Enguerrand Gentet, Bertrand David, Sebastien Denjean, Gaël Richard, Vincent Roussarie, « Optimisation d'un critère d'Intelligibilité de la Parole dans un Contexte Bruité Automobile », Congrès Français d'Acoustique (CFA), Avril 2018. (in French)

Simon Henriët, Umut Şimşekli, Gaël Richard, Benoit Fuentes, « Energy Disaggregation for Commercial Buildings: A Statistical Analysis », International Workshop on Non-Intrusive Load Monitoring (NILM2018), Austin, Tx, USA, 2018. **Best Poster Award**

Victor Bisot, Romain Serizel, Slim Essid, Gaël Richard, Leveraging deep neural networks with nonnegative representations for improved environmental sound classification, IEEE International Workshop on Machine Learning for Signal Processing MLSP, Sep 2017, Tokyo, Japan. 2017

Victor Bisot, Romain Serizel, Slim Essid, Gaël Richard, Nonnegative Feature Learning Methods for Acoustic Scene Classification DCASE 2017 – Workshop on Detection and Classification of Acoustic Scenes and Events, Nov 2017, Munich, Germany

Simon Leglaive, Roland Badeau, Gaël Richard (2017). Separating Time-Frequency Sources from Time-Domain Convolutional Mixtures Using Non-negative Matrix Factorization. IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA), New Paltz, New York, United States.

Sanjeel Parekh, Slim Essid, Alexey Ozerov, Ngoc Q. K. Duong, Patrick Perez, Gaël Richard (2017), "Guiding Audio Source Separation by Video Object Information", IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA), New Paltz, New York, United States.

Simon Leglaive, Roland Badeau, Gaël Richard (2017), "Semi-blind Student's t source separation for multichannel audio convolutive mixtures", Proc. of the European Signal Processing Conference (EUSIPCO), Kos island, Greece,

Simon Leglaive, Roland Badeau, Gaël Richard (2017), "Séparation de sources audio en milieu réverbérant : Factorisation en matrices non-négatives et représentation temporelle du mélange convolutif (in French)", Proc. of the XXVIe Colloque GRETSI, Juan-Les-Pins, France,

R. Serizel, V. Bisot, S. Essid and G. Richard, "Supervised group nonnegative matrix factorisation with similarity constraints and applications to speaker identification, "International Conference on Acoustics, Speech and Signal Processing (ICASSP)", New Orleans, USA

V. Bisot, R. Serizel, S. Essid and G. Richard, "Overlapping sound event detection with supervised nonnegative matrix factorization, "International Conference on Acoustics, Speech and Signal Processing (ICASSP)", New Orleans, USA

Clément Laroche, Hélène Papadopoulos, Matthieu Kowalski and Gaël Richard, (2017), Drum extraction in single channel audio signals using Multi Layer Non negative Matrix Factor Deconvolution "International Conference on Acoustics, Speech and Signal Processing (ICASSP)", New Orleans, USA

S. Leglaive, U. Simsekli, A. Liutkus, R. Badeau, G. Richard, (2017), Alpha Stable Multichannel Audio Source Separation "International Conference on Acoustics, Speech and Signal Processing (ICASSP)", New Orleans, USA

U. Simsekli, A. Durmus, R. Badeau, G. Richard, E. Moulines, (2017), Parallelized Stochastic Gradient Markov Chain Monte Carlo Algorithms for Non Negative Matrix Factorization, "International Conference on Acoustics, Speech and Signal Processing (ICASSP)", New Orleans, USA

S. Leglaive, R. Badeau, G. Richard, (2017), Multichannel audio source separation: variational inference of time frequency sources from time domain observations, "International Conference on Acoustics, Speech and Signal Processing (ICASSP)", New Orleans, USA

S. Parekh. S. Essid, A. Ozerov, N. Duong, P. Perez, G. Richard (2017), "Motion Informed Audio source Separation", "International Conference on Acoustics, Speech and Signal Processing (ICASSP)", New Orleans, USA.

Alain Durmus, Umut Simsekli, Eric Moulines, Roland Badeau and Gaël Richard, (2016), Stochastic Gradient Richardson Romberg Markov Chain Monte Carlo, "**Thirtieth Annual Conference on Neural Information Processing Systems (NIPS)**", Barcelona, Spain.

Thomas Janssoone, C. Clavel, Kévin Bailly and Gaël Richard, (2016), Using Temporal Association Rules For the synthesis of Embodied Conversational Agent With a specific stance., "International Conference on Intelligent Virtual Agents", Los Angeles, USA, n° 16th.

Simon Leglaive, Roland Badeau and Gaël Richard, (2016), Autoregressive Moving Average Modeling of Late Reverberation in the Frequency Domain, "European Signal Processing Conference (EUSIPCO)", Budapest, Hungary.

Umut Simsekli, Roland Badeau, Gaël Richard and Ali Taylan Cemgil, (2016), Stochastic Quasi Newton Langevin Monte Carlo, **International Conference on Machine Learning (ICML)**, New York, NY, USA.

Romain Serizel, Victor Bisot, Slim Essid and Gaël Richard, (2016), Machine listening techniques as a complement to video image analysis in forensics, "ICIP".

Romain Serizel, Slim Essid and Gaël Richard, (2016), Mini batch stochastic approaches for accelerated multiplicative updates in nonnegative matrix factorisation with beta divergence, "MLSP".

Karan Nathwani, Morgane Daniel, Gaël Richard, Bertrand David and Vincent Roussarie, (2016), Formant shifting for speech Intelligibility improvement in car noise environment, "ICASSP", Shanghai, Chine.

Simon Durand, Juan P. Bello, Bertrand David and Gaël Richard, (2016), Feature Adapted Convolutional Neural Networks for Downbeat Tracking, "ICASSP", Shanghai, Chine.

Umut Simsekli, Roland Badeau, Gaël Richard and Ali Taylan Cemgil, (2016), Stochastic thermodynamic integration: efficient Bayesian model selection via stochastic gradient MCMC, "ICASSP", Shanghai, China.

Victor Bisot, Romain Serizel, Slim Essid and Gaël Richard, (2016), Acoustic scene classification with matrix factorization for unsupervised feature learning, "ICASSP", Shanghai, Chine.

Romain Serizel, Slim Essid and Gaël Richard, (2016), Group nonnegative matrix factorisation with speaker and session variability compensation for speaker identification, "ICASSP", Shanghai, Chine.

Simon Leglaive, R. Badeau and Gaël Richard, (2015), Multichannel audio source separation with probabilistic reverberation modeling, "WASPAA", New Paltz, New York, USA.

Simon Durand, Juan P. Bello, Bertrand DAVID and Gaël Richard, (2015), Downbeat tracking with multiple features and deep neural networks, "ICASSP", Brisbane, Australie.

Hequn Bai, Laurent Daudet and Gaël Richard, (2015), Geometric-Based Reverberator Using Acoustic Rendering Networks, "IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA)", New Paltz, New York, U.S.A..

Simon Leglaive, R. Badeau et Gaël Richard, (2015), A priori probabiliste anéchoïque pour la séparation sous-déterminée de sources sonores en milieu réverbérant, "Colloque GRETSI", Lyon, France.

Clément Laroche, Matthieu Kowalski, Héléne Papadopoulos et Gaël Richard, (2015), Méthode Structurée de décomposition en matrices nonnégatives appliquée à la séparation de sources audio, "GRETSI", Lyon.

Victor Bisot, Slim Essid and Gaël Richard, (2015), Hog and Subband power distribution image features for acoustic scene classification, "EUSIPCO", Nice, France, pp. 719 723.

Clément Laroche, Matthieu Kowalski, Héléne Papadopoulos and Gaël Richard, (2015), A structured nonnegative matrix factorization for source separation, "EUSIPCO", Nice.

Camila de Andrade Scatolini, Gaël Richard et Benoît Fuentes, (2015), Multipitch estimation using a PLCA-based model: impact of partial user annotation, "ICASSP", Brisbane,

Emmanouil Benetos, R. Badeau, Tillman Weyde et Gaël Richard, (2014), Template adaptation for improving automatic music transcription, "ISMIR 2014", Taipei, Taiwan.

Benoît Fuentes, R. Badeau et Gaël Richard, (2014), Controlling the Convergence Rate to Help Parameter Estimation in a PLCA-based Model, "EUSIPCO", Lisbon, Portugal.

Xabier Jaureguiberry, E. Vincent et Gaël Richard, (2014), Multiple-order non-negative matrix factorization for speech enhancement, in Proceedings of Interspeech, 2014.

Nicolás López, Yves Grenier, Gaël Richard et Ivan Bourmeyster, (2014), Single Channel Reverberation Suppression Based on Sparse Linear Prediction, "IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)", Florence, Italy.

Xabier Jaureguiberry, E. Vincent et Gaël Richard, (2014), Variational Bayesian model averaging for audio source separation, "SSP (Workshop on Statistical Signal Processing)".

Aymeric Masurelle, S. Essid et Gaël Richard, (2014), Gesture recognition using a NMF-based representation of motion-traces extracted from depth silhouettes, "IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)", Florence, Italy.

Simon Durand, Bertrand DAVID et Gaël Richard, (2014), Enhancing downbeat detection when facing different music styles, "IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP)", Florence, Italie, pp. 3152-3156.

G. Richard, (2014), Informed Audio source Separation, "AES International Conference on Semantic Audio", London, GB.

Manuel Moussallam, Alexandre Gramfort, Laurent Daudet et Gaël Richard, (2013), Débruitage Aveugle par Décompositions Parcimonieuses et Aléatoires, "GRETSI", Brest, France.

Sébastien Fenet, Yves Grenier, Gaël Richard: An Extended Audio Fingerprint Method with Capabilities for Similar Music Detection. ISMIR 2013: 569-57

Nicolás López, Mounira Maazaoui, Yves Grenier, Gaël Richard et Ivan Bourmeyster, (2013), Does dereverberation help multichannel blind source separation? A study case, "European Signal Processing Conference (EUSIPCO)", Marrakech, Maroc.

Antoine Liutkus, J.-L. Durrieu, Laurent Daudet et G. Richard, (2013), An overview of informed audio source separation, "WIAMIS".

Antoine Liutkus, R. Badeau et Gaël Richard, (2013), Low bitrate informed source separation of realistic mixtures, "ICASSP", Vancouver, Canada, pp. 66-70.

Aymeric Masurelle, Slim Essid et Gaël Richard, (2013), MULTIMODAL CLASSIFICATION OF DANCE MOVEMENTS USING BODY JOINT TRAJECTORIES AND STEP SOUNDS, "International Workshop on Image and Audio Analysis for Multimedia Interactive Services WIAMIS", Paris, France.

Konstantinos Apostolakis*, Dimitrios Alexiadis, Petros Daras, David Monaghan, Noel O'Connor, Benjamin Prestele, Peter Eisert, Gaël Richard, Qianni Zhang, Ebroul Izquierdo, Maher Ben Moussa and Nadia Magnenat, Blending real with virtual in 3Dlife, WIAMIS 2013, Paris France

Xabier Jaureguiberry, Gaël Richard, P. Leveau, Romain Hennequin et E. Vincent, (2013), Introducing A Simple Fusion Framework For Audio Source Separation, "Machine Learning for Signal Processing (MLSP)", Southampton, UK

Rémi Foucard, Slim Essid, Gaël Richard and Mathieu Lagrange, Exploring new features for music classification, WIAMIS 2013, Paris France

Sylvain Marchand, R. Badeau, Cléo Barras, Laurent Daudet, Dominique Fourer, L. Girin, Stanislaw Gorlow, Antoine Liutkus, Jonathan Pinel, Gaël Richard, Nicolas Sturm et Shuhua Zhang, (2012), DReaM: a novel system for joint source separation and multi-track coding, "133rd AES Convention", San Francisco, USA.

Nicolás López, Yves Grenier, Gaël Richard et Ivan Bourmeyster, (2012), Low variance blind estimation of the reverberation time, "13th International Workshop on Acoustic Signal Enhancement (IWAENC 2012)", Aachen, Germany.

Benoît Fuentes, R. Badeau et G. Richard, (2012), Blind Harmonic Adaptive Decomposition Applied to Supervised Source Separation, "20th European Signal Processing Conference (EUSIPCO)", Bucharest, Romania, pp. 2654-2658.

Antoine Liutkus, A. Ozerov, R. Badeau et G. Richard, (2012), Spatial Coding-based Informed Source Separation, "20th European Signal Processing Conference (EUSIPCO)", Bucharest, Romania, pp. 2407-2411.

Antoine Liutkus, Stanislaw Gorlow, Nicolas Sturmel, Shuhua Zhang, L. Girin, R. Badeau, Laurent Daudet, Sylvain Marchand et G. Richard, (2012), Informed Audio Source Separation: A Comparative Study, "20th European Signal Processing Conference (EUSIPCO)", Bucharest, Romania, pp. 2397-2401.

Sébastien Fenet, Manuel Moussallam, Yves Grenier, Gaël Richard et Laurent Daudet, (2012), A Framework for Fingerprint-Based Detection of Repeating Objects in Multimedia Streams, "EUSIPCO", Bucharest, Romania, pp. 1464-1468.

Manuel Moussallam, Gaël Richard et Laurent Daudet, (2012), AUDIO SOURCE SEPARATION INFORMED BY REDUNDANCY WITH GREEDY MULTISCALE DECOMPOSITIONS, "European Signal Processing Conference", Bucarest, Roumanie, pp. 2644-2648.

Nicolas Sturmel, Antoine Liutkus, Jonathan Pinel, L. Girin, Sylvain Marchand, G. Richard, R. Badeau et Laurent Daudet, (2012), Linear mixing models for active listening of music productions in realistic studio conditions, "132nd AES Convention", Budapest, Hongrie.

Rémi Foucard, Slim ESSID, Mathieu Lagrange et Gaël Richard, (2012), A REGRESSIVE BOOSTING APPROACH TO AUTOMATIC AUDIO TAGGING BASED ON SOFT ANNOTATOR FUSION, "IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)", Kyoto, Japan.

Antoine Liutkus, Zafar Rafii, R. Badeau, Bryan Pardo et G. Richard, (2012), Adaptive filtering for music/voice separation exploiting the repeating musical structure, "37th International Conference on Acoustics, Speech, and Signal Processing ICASSP'12", Kyoto, Japan, pp. 53-56.

Benoît Fuentes, Antoine Liutkus, R. Badeau et G. Richard, (2012), Probabilistic model for main melody extraction using constant-Q transform, "37th International Conference on Acoustics, Speech, and Signal Processing ICASSP'12", Kyoto, Japan, pp. 5357-5360.

Manuel Moussallam, Laurent Daudet et Gaël Richard, (2012), Random time-frequency Subdictionary design for sparse representation with greedy algorithms, "ICASSP", Kyoto, Japon, pp. 3577-3580.

Maksim Khadkevich, T. Fillon, G. Richard et Maurizio Omologo, (2012), A probabilistic approach to simultaneous extraction of beats and downbeats , "IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)", Kyoto Japan, pp. 445-448 .

Slim ESSID, Yves Grenier, Mounira Maazaoui, G. Richard et Robin Tournemene, (2011), An audio-driven virtual dance-teaching assistant, "ACM Multimedia", Scottsdale, Arizona, USA.

Slim ESSID, Xinyu Lin, Marc Gowing, Georgios Kordelas, Anil Aksay, Philip Kelly, Thomas Fillon, Qianni Zhang, Alfred Dielmann, Vlado Kitanovski, Robin Tournemene, N. E. O'Connor, Petros Daras et G. Richard, (2011), A multimodal dance corpus for research into real-time interaction between humans in online virtual environments , "ICMI WORKSHOP ON MULTIMODAL CORPORA FOR MACHINE LEARNING", Alicante, Spain.

Alexey Ozerov, Antoine Liutkus, R. Badeau et G. Richard, (2011), Informed source separation: source coding meets source separation, "Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA)", New Paltz, New York, USA, pp. 257-260.

Cyril Joder, Slim ESSID et G. Richard, (2011), Optimizing the Mapping from a Symbolic to an Audio Representation for Music-to-Score Alignment, "Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA)", New Paltz, New York, USA.

- Sébastien Gulluni, Slim Essid, Olivier Buisson et G. Richard, (2011), An Interactive System for Electro-Acoustic Music Analysis, "ISMIR", Miami, USA.
- Sébastien Fenet, Gaël Richard et Yves Grenier, (2011), A Scalable Audio Fingerprint Method with Robustness to Pitch-Shifting, "ISMIR", Miami, USA, pp. 121-126.
- Rémi Foucard, Slim Essid, Mathieu Lagrange et Gaël Richard, (2011), Multi-scale temporal fusion by boosting for music classification, "ISMIR", Miami, USA, pp. 663--668.
- Benoît Fuentes, R. Badeau et G. Richard, (2011), Analyse des structures harmoniques dans les signaux audio : modéliser les variations de hauteur et d'enveloppe spectrale, " XXIIIème Colloque GRETSI", Bordeaux, France.
- Sébastien Fenet, Yves Grenier et Gaël Richard, (2011), Une empreinte audio à base de CQT appliquée à la surveillance de flux radiophoniques, "GRETSI", Bordeaux, France, pp. NA.
- Sébastien Gulluni, Slim Essid, Olivier Buisson et G. Richard, (2011), Interactive Classification of Sound Objects for Polyphonic Electro-Acoustic Music Annotation, "AES Conference", Ilmenau, Allemagne.
- Antoine Liutkus, R. Badeau et G. Richard, (2011), Multi-dimensional signal separation with Gaussian processes, "IEEE Workshop on Statistical Signal Processing (SSP2011)", Nice, France.
- Benoît Fuentes, R. Badeau et G. Richard, (2011), Adaptive harmonic time-frequency decomposition of audio using shift-invariant PLCA, "36th International Conference on Acoustics, Speech, and Signal Processing ICASSP'11", Prague, Czech Republic.
- O. Derrien, R. Badeau et G. Richard, (2011), Entropy-constrained quantization of exponentially damped sinusoids parameters, "36th International Conference on Acoustics, Speech, and Signal Processing ICASSP'11", Prague, Czech Republic.
- C. Joder, Slim Essid et G. Richard, (2011), Hidden Discrete Tempo Model: a Tempo-aware Timing Model for Audio-to-Score Alignment, "ICASSP", Prague, Rep. Tchèque.
- Felix Weninger, J.-L. Durrieu, Florian Eyben, G. Richard et Bjorn Schüller, (2011), COMBINING MONAURAL SOURCE SEPARATION WITH LONG SHORT-TERM MEMORY FOR INCREASED ROBUSTNESS IN VOCALIST GENDER RECOGNITION, "ICASSP 2011", Prague.
- Manuel Moussallam, Laurent Daudet et G. Richard, (2011), Audio Signal Representations for Factorization in the sparse domain, "ICASSP", Prague, Czech, pp. 513-516.
2010
- F. Vallet, Slim Essid, J. Carrive and G. Richard, "ROBUST VISUAL FEATURES FOR THE MULTIMODAL IDENTIFICATION OF UNREGISTERED SPEAKERS IN TV TALK-SHOWS", Proc. of ICIP, Oct 2010.
- C. Joder, Slim Essid and G. Richard, "A Conditional Random Field Viewpoint of Symbolic Audio-to-Score Matching", Proc. of ACM Multimedia, oct 2010, Firenze, Italy
- M. Moussalam, T. Fillon, G. Richard et L. Daudet, "How Sparsely Can a Signal be Approximated while Keeping its Class Identity?", Proc. of MML10, satellite workshop of ACM Multimedia, oct 2010, Firenze, Italy
- Antoine Liutkus, R. Badeau and G. Richard, "Informed source separation using latent components", Proc. of ICA/LVA 2010, St Malo, France

C. Joder, Slim Essid and G. Richard, "An Improved Hierarchical Approach for Music-to-Symbolic Score Alignment", Proc. of ISMIR 2010, Utrecht, Netherlands.

B. Mathieu, Slim Essid, T. Fillon, J. Prado and G. Richard, "YAAFE, AN EASY TO USE AND EFFICIENT AUDIO FEATURE EXTRACTION SOFTWARE", Proc. of ISMIR 2010, Utrecht, Netherlands.

S. Bozonnet, F. Vallet, N. Evans, Slim Essid, J. Carrive and G. Richard, "A multimodal approach to initialisation for top-down speaker diarization of television shows", Proc. of Eusipco 2010, Aalborg, Denmark

Rémi Foucard, J.-L. Durrieu, Mathieu Lagrange and G. Richard, "Multimodal similarity between musical streams for cover version detection", Proc. of ICASSP 2010, Dallas, USA.

Mathieu Lagrange, R. Badeau and G. Richard, "Robust similarity metrics between audio signals based on asymmetrical spectral envelope matching", Proc. of ICASSP 2010, Dallas, USA.

E. Dupraz and G. Richard, "Robust frequency-based audio fingerprinting", Proc. of ICASSP 2010, Dallas, USA.

C. Joder, Slim Essid and G. Richard, "A Comparative Study of tonal acoustic Features for a Symbolic Level Music-to-Score Alignment", Proc. of ICASSP 2010, Dallas, USA.

Rémi Foucard, J.-L. Durrieu, Mathieu Lagrange and G. Richard, "Multimodal similarity between musical streams for cover version detection", Proc. of ICASSP 2010, Dallas, USA.

J. Weil, J.-L. Durrieu, G. Richard et Thomas Sikora, "Automatic Generation of Lead Sheets from Polyphonic Music Signals", Proc. of ISMIR 2009, Kobe, Japan, 2009.

M. Ramona, G. Richard, "Comparison of different strategies for a SVM-based audio segmentation", In Proc. of European Conference on Signal Processing, EUSIPCO'09, Sept. 2009, Glasgow, UK.

J.L Durrieu, A. Ozerov, C. Févotte, G. Richard and B. David, "Main Instrument Separation from Stereophonic Audio Signals using a Source/Filter Model", In Proc. of European Conference on Signal Processing, EUSIPCO'09, Sept. 2009, Glasgow, UK.

C. Joder, S. Essid, G. Richard, "Etude des descripteurs acoustiques pour l'alignement temporel audio-sur-partition musicale", in Proc. of Colloque GRETSI, Sept. 2009 (in French).

J.L Durrieu, A. Ozerov, C. Févotte, G. Richard and B. David, "An Iterative Approach to Manaural Musical Mixture De-soloing" IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP'09, Taipei, Taiwan, April 2009.

M. Lardeur, S. Essid, G. Richard, M. Haller and T. Sikora, "Incorporating Prior Knowledge on the Digital Media Creation Process into Audio Classifiers" IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP'09, Taipei, Taiwan, April 2009.

E. Ravelli, G. Richard and L. Daudet, "Fast MIR in a sparse transform domain, In Proc of International Conference on Music Information Retrieval, ISMIR 2008, Sept. 2008, Philadelphia, USA.

E. Ravelli, G. Richard and L. Daudet, "Matching Pursuit in Adaptive Dictionaries for Scalable Audio Coding, In Proc of European Conference on Signal Processing, EUSIPCO'08, Sept. 2008, Lausanne, Switzerland.

S. Wegener, M. Haller, J-JBurred, T. Sikora, S. Essid and G. Richard, "On the Robustness of Audio Features for Musical Instrument Classification, In Proc of European Conference on Signal Processing, EUSIPCO'08, Sept. 2008, Lausanne, Switzerland.

C. Joder, S. Essid and G. Richard, "Alignment Kernels for Audio Classification with Application to Music Instrument Recognition, In Proc of European Conference on Signal Processing, EUSIPCO'08, Sept. 2008, Lausanne, Switzerland.

M. Ramona, G. Richard, "Segmentation parole/musique par Machines à Vecteurs de Support", Journées d'Etude de la Parole JEP 2008, Avignon, France.

J-L. Durrieu, G. Richard and B. David, "Singer melody extraction in polyphonic signals using source separation methods, IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP'08, LAs Vegas, USA, April 2008.

M. Ramona, G. Richard, B. David, "Vocal detection in music with support vector machines", IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP'08, LAs Vegas, USA, April 2008.

O. Gillet and G. Richard, "Supervised and Unsupervised Sequence Modelling for Drum Transcription, In Proc of 8th International Conference on Music Information Retrieval, ISMIR 2007, Sept. 2007, Vienna, Austria.

E. Ravelli, G. Richard and L. Daudet, "Extending fine-grain scalable audio coding to very low bitrates using overcomplete dictionaries," Proc. of IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA'07), october 2007.

G. Richard, P. Leveau, L. Daudet, S. Essid and B. David, "Towards polyphonic musical instrument recognition", 19th International Congress on Acoustics (ICA), Madrid, 2-7 september 2007.

N. Bertin, R. Badeau and G. Richard, "Blind signal decompositions for automatic transcription of polyphonic music: NMF and K-SVD on the benchmark", IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP'07, Honolulu, Hawaii, USA, 15-20 avril 2007.

R. Badeau, B. David and G. Richard, "Conjugate gradient algorithms for minor subspace analysis," IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP'07, Honolulu, Hawaii, USA, 15-20 avril 2007.

G. Richard, M. Ramona and S. Essid, "Combined supervised and unsupervised approaches for automatic segmentation of radiophonic audio streams", IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP'07, Honolulu, Hawaii, USA, 15-20 avril 2007.

C. Clavel, L. Devillers, G. Richard, I. Vasilescu and T. Ehrette, "Abnormal Situation Detection And Analysis Through Fear-Type Acoustic Manifestations ,IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP'07, Honolulu, Hawaii, USA, 15-20 avril 2007.

K. McGuinness, O. Gillet, N. E. O'Connor, and G. Richard, Visual Analysis for Drum Sequence Transcription, EUSIPCO 2007 - Proceedings of the 15th European Signal Processing Conference, Poznan, Poland, 3-7 September 2007,

P. Leveau, E. Vincent, L. Daudet, G. Richard, Mid-level sparse representations for timbre identification: design of an instrument-specific harmonic dictionary," 1st Workshop on Learning the Semantics of Audio Signals (LSAS 2006), Athens, Greece, December 2006.

C. Clavel, I. Vasilescu, L. Devillers, T. Ehrette and G. Richard. "Fear-type emotions of the Safe corpus: annotation issues." In Proc. of LREC 2006, Genoa, Italy, May 2006.

M. Betser, P. Collen, G. Richard. "Frequency Estimation Based on Adjacent DFT bins", in Proc of the European Signal Processing Conference (EUSIPCO-2006), Sept. 2006, Florence, Italy.

M. Betser, P. Collen, G. Richard, B. David, "Review and Discussion on Classical STFT-Based Frequency Estimators", International Convention of the Audio Engineering Society (AES), Paris, France, May 2006

O. Gillet & G. Richard, "ENST-Drums: an extensive audio-visual database for drum signals processing". In Proc of 7th International Conference on Music Information Retrieval, ISMIR 2006, Oct. 2006, Victoria, Canada.

S. Essid, G. Richard and B. David, "Hierarchical Classification of Musical Instruments on Solo Recordings" IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP'06, Toulouse, France, 15-19 mai 2006,

- R. Badeau, B. David and G. Richard “YAST Algorithm for Minor Subspace Tracking”, IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP'06, Toulouse, France, 15-19 mai 2006, vol. III, pp. 552-555
- O. Gillet and G. Richard, “Comparing Audio and Video Segmentations for Music Videos Indexing”. IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP'06, Toulouse, France, may 2006.
- B. David, R. Badeau and G. Richard, “HRHATRAC Algorithm for Spectral Line Tracking of Musical Signals, IEEE International Conference on Acoustics, Speech, and Signal Processing, ICASSP'06, Toulouse, France, 15-19 mai 2006, vol. III, pp. 45-48
- C. Clavel, I. Vasilescu, L. Devillers, G. Richard, T. Ehrette, and C. Sedogbo. “The SAFE Corpus: illustrating extreme emotions in dynamic situations.” In Proc. of LREC Workshop on Corpora for Research on Emotion and Affect, Genoa, Italy, May 2006.
- C. Clavel, I. Vasilescu, G. Richard and L. Devillers. “Voiced and Unvoiced content of fear-type emotions in the SAFE Corpus.” In Proc. of Speech Prosody 2006, Dresden, Germany, May 2006.
- R. Badeau, G. Richard and B. David, “Fast adaptive ESPRIT algorithm”, International Conference on Statistical Signal Processing (SSP'05), Bordeaux, France, July 2005.
- O. Gillet & G. Richard, “Extraction and Remixing of Drum Tracks from Polyphonic Music Signals”. IEEE Workshop on Applications of Signal Processing to Audio and Acoustics, WASPAA'05, New Paltz, USA.
- S. Essid, G. Richard, B. David, “Inferring Efficient Hierarchical Taxonomies for MIR Tasks: Application to Musical Instruments”, International Conference on Music Information Retrieval (ISMIR), London, Great-Britain, Sept. 2005
- O. Gillet, Gael Richard, “Drum Track Transcription of Polyphonic Music Using Noise Subspace Projection”, International Conference on Music Information Retrieval (ISMIR), London, Great-Britain, Sept. 2005.
- C. Clavel, T. Ehrette and G. Richard, “Events Detection for An Audio-Based Surveillance System”, International Conference on Multimedia and Expo (IEEE-ICME'05), Amsterdam, The Netherlands, July 2005.
- Miguel Alonso, Gaël Richard and Bertrand David, “Extracting Note Onsets from Musical Recordings”, International Conference on Multimedia and Expo (IEEE-ICME'05), Amsterdam, The Netherlands, July 2005
- O. Gillet and G. Richard, “Indexing and querying drum loops databases”, International workshop on Content Based on Multimedia and Indexing (CBMI'05), Riga, Latvia, June 2005. **Received the CBMI BEST PAPER Award**
- S. Essid, P. Leveau, G. Richard, L. Daudet and B. David, “On the usefulness of differentiated transient/steady-state processing in machine recognition of musical instruments”, International Convention of the Audio Engineering Society (AES), Barcelona, Spain, May 2005
- R. Badeau, B. David and G. Richard, “Yet Another Subspace Tracker”, International Conference on Acoustics, Speech, and Signal Processing ICASSP'05, Philadelphia, USA, March 2005.
- S. Essid, G. Richard and B. David, “Instrument recognition in polyphonic music”, International Conference on Acoustics, Speech, and Signal Processing ICASSP'05, Philadelphia, USA, March 2005.
- M. Guillaume, Y. Grenier and G. Richard, “Iterative Algorithms for Multichannel Equalization in Sound Reproduction Systems”, International Conference on Acoustics, Speech, and Signal Processing ICASSP'05, Philadelphia, USA, March 2005.
- O. Gillet and G. Richard, “Automatic Transcription of Drum Sequences using Audiovisual Features”, International Conference on Acoustics, Speech, and Signal Processing ICASSP'05, Philadelphia, USA, March 2005.

- P. Leveau, L. Daudet et G. Richard ,”Methodology and Tools for the evaluation of automatic onset detection algorithms in music”, International Symposium on Music Information Retrieval (ISMIR), Barcelone, Espagne, oct 2004.
- M. Alonso, B. David et G. Richard, “Tempo And Beat Estimation Of Musical Signals” International Symposium on Music Information Retrieval (ISMIR), Barcelone, Espagne, oct 2004.
- S. Essid, G. Richard et B. David, “Musical instrument recognition based on class pairwise feature selection”, International Symposium on Music Information Retrieval (ISMIR), Barcelone, Espagne, oct 2004.
- M. Guillaume, Y. Grenier et G. Richard ,”Iterative Algorithms for Multichannel Equalization “, 23rd VDT International Audio Convention, Leizzig, Allemagne, Nov. 2004.
- S. Essid, G. Richard et B. David « Musical instrument recognition on solo performances », European Signal Processing Conference EUSIPCO’04, Vienna, Austria, Sept. 7-10, 2004.
- S. Essid, G. Richard et B. David « Efficient musical instrument recognition on solo performance music using basic features», 25th International AES Conference, London, UK, June 17-19, 2004.
- O. Gillet et G. Richard, “Automatic transcription of drum loops”, International Conference on Acoustics, Speech, and Signal Processing ICASSP’04, Montréal, Québec, 17-21 mai 2004
- R. Badeau, B. David et G. Richard “Selecting the modeling order for the ESPRIT high resolution method: an alternative approach” International Conference on Acoustics, Speech, and Signal Processing ICASSP’04, Montréal, Québec, 17-21 mai 2004
- O. Gillet et G. Richard , “Automatic Labelling of Tabla Signals”, Proc of ISMIR 2003, Baltimore, USA Oct. 2003
- R. Badeau, K. Abed-Meraim, G. Richard et B. David, Sliding Window Orthonormal PAST Algorithm, Proceedings of the 2003 International Conference on Acoustics, Speech, and Signal Processing ICASSP’03, Hong Kong, Chine, 6-10 avril 2003, vol. V, pp. 261-264
- R. Badeau, G. Richard et B. David, Adaptive ESPRIT algorithm based on the PAST subspace tracker, Proceedings of the 2003 International Conference on Acoustics, Speech, and Signal Processing ICASSP’03, Hong Kong, Chine, 6-10 avril 2003, vol. VI, pp. 229-232
- R. Badeau, G. Richard, B. David et K. Abed-Meraim, Approximated power iterations for fast subspace tracking, Proceedings of the 7th International Symposium on Signal Processing and its Applications ISSPA 2003, Paris, France, 1-4 juillet 2003, vol. II, pp. 583-586
- B. David, G. Richard, R. Badeau, An EDS modelling tool for tracking and modifying musical signals, Stockholm Music Acoustics Conference 2003, Stockholm, Suède, 6-9 août 2003
- R. Badeau, G. Richard et B. David, Suivi d'espace dominant par la méthode des puissances itérées, 19ème colloque GRETSI sur le traitement du signal et des images, Paris, France, 8-11 septembre 2003, (in French)
- M. Alonso, R. Badeau, B. David et G. Richard, Musical tempo estimation using noise subspace projections, IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA '03), New Paltz, New York, 19-22 octobre 2003,
- M. Alonso, B. David et G. Richard, Tempo Tracking Algorithms from Polyphonic Music Signals”. A Study of Tempo Tracking Algorithms from Polyphonic Music Signals”. 4th COST 276 Workshop, France, Mar 2003.
- G. Richard. “Towards large databases for Music Information Retrieval systems development and evaluation”, White Paper, Evaluation Panel, ISMIR 2002
- B. David, R. Badeau, G. Richard, Sintrack analysis for tracking components of musical signals, Proc. of the Forum Acusticum Sevilla 2002, Séville, Espagne, 16-20 septembre 2002

A. Moreno, B. Lindberg, C. Draxler, G. Richard, K. Choukri, S. Euler, J. Allen. "SPEECH DAT CAR. A Large Speech Database For Automotive Environments", Proc. of LREC 2000, Athens, June 2000.

Richard G., "The SpeechDat-Car Project: Overview of a very large multilingual speech database recorded in cars", Proc. of XLDB 2000 (satellite workshop to LREC2000), Athens, Greece, May 29th, 2000.

Van den Heuvel H., Boudy J., Comeyne R., Euler S., Moreno A., Richard G., "The SpeechDat-Car Multilingual Speech databases for in-car applications: some first validation results", Proc. of Eurospeech'99, Budapest, Sept. 1999.

Sala M., Sánchez F., Wengelnik H., Van den Heuvel H., Moreno A., Deregibus E., Richard G., Le Chevalier E., "SpeechDat-Car : Speech Databases for Voice Driven teleservices and control of in-car applications", EAEC Congress, Spain, July 1999.

Van den Heuvel H., Bonafonte A., Boudy J., Dufour S., Lockwood P., Moreno A., Richard G., "SpeechDat-Car : Towards a collection of Speech Databases for Automotive Environment", Cost 249 Workshop on Speech Recognition Robustness, Finland, June 1999.

Richard G., Menguy Y. , Guis I., Lockwood P., "Secured Access to terminals and teleservices using biometrics verification", Proc. of COST 254, May 1999, Lausanne, Switzerland.

Richard G, Menguy Y., Guis I., Suaudeau N., Boudy J. & al. "Multi Modal Verification for Teleservices and Security Applications (M2VTS)", Proc. of IEEE-ICMCS'99, Firenze, June 1999.

Tefas A., Menguy Y., Kotropoulos C., Richard G., Pitas I., Lockwood P., « Compensating for variable recording conditions in frontal face authentication algorithms », Proc. of IEEE - ICASSP99, May 1999, Phoenix, USA.

Richard G. & al. "The M2VTS project: towards Multi Modal Verification for Teleservices and Security Applications", Proc. of ECMAST'98, May 1998.

Chennoukh S., Sinder D., Richard G., Flanagan J.L., "Improved Techniques for Voice Mimic Systems Using Articulatory Codebooks," in Proceedings of EUROSPEECH '97, (Rhodes, Greece), pp. 429--432, Sept. 1997.

Richard G., Le Doré A., Sibade C., Boudy J., Lockwood P., Horbach H., Rosenthal M., "Audio Coding and 3D Sound Simulation", Proc. of ADVICE'97, Bristol, Great-Britain.

Levinson S, Krane M, Kubli R., Coker C., Flanagan J.L., Richard G., Sinder D., Davis D., Slimon S., "Studying the effects of fluid dynamics on speech production", in Proceedings of the International Symposium on Simulation, Visualization and Auralization for Acoustic Research and Education (ASVA97), (Tokyo, Japan), Apr. 1997.

Richard G., Goirand M., Sinder D., Flanagan J.L., "Simulation and visualization of articulatory trajectories estimated from speech signals," in Proceedings of the International Symposium on Simulation, Visualization and Auralization for Acoustic Research and Education (ASVA97), (Tokyo, Japan), Apr. 1997.

Sinder D., Richard G., Duncan H., Flanagan J., Slimon S., Davis D., Krane M., Levinson S., "Flow visualization in stylized vocal tracts," in Proceedings of the International Symposium on Simulation, Visualization and Auralization for Acoustic Research and Education (ASVA97), (Tokyo, Japan), Apr. 1997.

Levinson S., Krane M., Slimon S., Richard G., Sinder D., Duncan H., Lin Q., Flanagan J., Davis D., (1996), "Fluid flow measurements and simulations in stylized geometries of dental fricatives", Int. Conf. of Spoken Lang. Proc. (ICSLP96), Philadelphia, PA, Oct 3-6 1996.

Richard G., Sinder D., Duncan H., Lin Q., Flanagan J., Levinson, S., Krane M., Davis D., Slimon S., (1996). "Low Mach Number, Low Reynolds Number simulation of the fluid flow in the vocal tract", 2nd AIAA Aeroacoustics Conference, Pen State University, May 4-7 1996.

Sinder D., Richard G., Duncan H., Lin Q., Flanagan J., Levinson S., Davis D., Slimon S., (1996). "A fluid flow approach to speech generation", in the proceedings of the first ESCA Tutorial and Research Workshop on Speech Production Modeling: From control strategies to Acoustic, Autrans, France, May 21-24, 1996.

Richard G., Liu M., Sinder D., Duncan H., Lin Q., Flanagan J., Levinson S., Davis D., Slimon S., (1995). "Numerical simulations of fluid flow in the vocal tract," Proc. of Eurospeech, Madrid, Spain, septembre 18-21, pp. 1297-1300.

Richard G., d'Alessandro C., (1994). "Time-domain Analysis and synthesis of speech noises", ESCA/IEEE Workshop on Speech Synthesis, New Paltz, NY, USA, Sept. 22-25.

Grau S., d'Alessandro C. & Richard G., (1993). "A speech formant synthesizer based on harmonic + random formant-waveforms representations", Proc. of EUROSPEECH., Sept. 1993, Berlin, Allemagne.

d'Alessandro C., Richard G., (1992). "Random wavelet representation of unvoiced speech", IEEE symposium on Time-Frequency and Time-Scale Analysis, Victoria, British Columbia, Canada, Oct. 4-6, 1992.

Richard G., d'Alessandro C., Grau S. (1992). "Unvoiced speech analysis and synthesis using Poissonian random formant wave functions", Proc of 6th Eur. Signal Processing Conf., Aou. 25-28/1992, Bruxelles, in Signal Processing VI, Theories and applications, Elsevier Science Publishers, Amsterdam

Richard G., d'Alessandro C., Grau S. (1992). "Synthèse de bruits par Formes d'Ondes Formantiques aléatoires", (en français), Proc. of 19th "Journées d'études sur la Parole, 19-22 mai, 1992, Bruxelles, Belgique (in French)

Richard G., d'Alessandro C. & Grau S., (1993). "Musical noise synthesis using random waveforms", Proc. of Stockholm Musical Acoustic Conference (SMAC93). Juil. 1993, Stockhohm, Suède.

Castellengo M., Richard G., d'Alessandro C. (1989). "Study of vocal pitch vibrato perception using synthesis", Proc. of 13th Int. Cong. on Acoust., Aou. 24-31, 1989, Yougoslavie (Belgrade).

Other Publications: Specific publications (summary only)

Olivier Derrien, Gaël Richard et Roland Badeau,, Damped sinusoids and subspace based approach for lossy audio coding, Acoustics'08, Paris, France, 29 juin - 4 juillet 2008

Durrieu J.-L., Richard G. and David B., Single sensor singer/music separation using a source/filter model of the singer voice , Acoustics'08, Paris, France, 29 juin - 4 juillet 2008

B. David, R. Badeau, N. Bertin, V. Emiya et G. Richard, Multipitch detection for piano music: Benchmarking a few approaches,, The Journal of the Acoustical Society of America, novembre 2007, vol. 122, no. 5, pp. 2962

S. Chennoukh, D. Sinder, G. Richard and J. Flanagan, "Articulatory based low bit-rate speech coding", J. Acous. Soc. Of Amer., vol. 102, no. 5, p. 3163, Nov. 1997

Zussa F., Lin Q., Richard G., Sinder D., Flanagan J., (1995). "Open-loop acoustic-to-articulatory mapping," JASA, Vol. 98, No 5, Pt 2, novembre 1995, pp2931.

Richard G., Lin Q., Zussa F., Sinder D., Che C., Flanagan J., (1995). "Vowel recognition using an articulatory representation," JASA, Vol. 98, No 5, Pt 2, novembre 1995, pp2965-2966.

Richard G., Liu M., Sinder D., Duncan H., Lin Q., Flanagan J., Levinson S., Davis D., Slimon S., (1995). "Vocal tract simulations based on fluid dynamic analysis", JASA, Vol. 97, No 5, Pt 2, Mai 1995, pp3245.

Lin Q., Richard G., Zou J., Sinder D., Flanagan J., (1995). "Use of TRACTTALK for adaptive voice mimic," JASA, Vol. 97, No 5, Pt 2, Mai 1995, pp3247

Internal reports

Richard G., (1990). Rules for fundamental frequency transition in singing synthesis, Trita/tom-90/03, ISSN 0280-9850, Mars 1990, Institut Royal de Technologie, Stockholm, Suede.

d'Alessandro C., Richard G., (1992). Random representation of speech noises, Notes et Documents LIMSI, 92-7,Orsay.

Richard G., Sinder D., Duncan H., Flanagan J., Levinson S., Krane M., Davis D., Slimon S., "Computational models for Speech Generation", CAIP Update, Vol 10, N°3, 1996.

MPEG input documents

Matra Nortel Com., "Test results of the evaluation of G722 compared to AMR-EFR and AMR-7.4 kbit/s", ETSI SMG11-SQ, Tdoc SMG11, June 1999.

G. Richard, C. Venot, "Report of practical complexity evaluation of an optimised HILN decoder", March 1998, document M3293, Tokyo, Japan.

G. Richard, A. Le Doré, P. Lockwood, "Test results on speech codecs (MPEG4 CELP, G723.1, Scalable Speech codec based on G723.1 (M2917))", July 1998, document m3758, Dublin, Ireland.

C. Sibade, S. Weiss, A. Ledore, G. Richard, "MPEG4 Audio demonstrator", July 1998, document m3783, Dublin, Ireland.

G. Richard, C. Murgia, J-L Bonifas, A. Le Dore, P. Lockwood "Revised technical description of Matra's scalable speech/audio codec", Oct. 1997, input Document M2917, Fribourg, Switzerland.

G. Richard, A. Le Dore, "Results of Core Experiment on an extension of the narrow-band CELP VM coder to a bandwidth scalable CELP (m2486)", Oct. 1997, input Document M2682, Fribourg, Switzerland.

G. Richard, "Results of Core Experiment on Lossless Coding in the CELP core of the MPEG-4 Audio VM (m2495)", Oct. 1997, input Document M2698, Fribourg, Switzerland.

G. Richard, C. Murgia, J-L Bonifas, A. Le Dore, P. Lockwood, "Results of Core Experiment on Matra's low to medium bit rates scalable audio/speech codec (m2346)" , Oct. 1997, input Document M2699, Fribourg, Switzerland.

G. Richard, A. Le Doré, C. Murgia, C. Lacas, P. Lockwood "A Scalable Audio and Speech coder based on a Core Coder", July 97, input document MPEG97/ M2346, Stockholm, Sweden.

P. Bonnard, G. Richard, C. Sibade, F. Rigoulet, "An implementation of graceful-degradation concept in a 3D audio compositor", April 1997, document m1998, Bristol, UK.

G. Richard, P. Bonnard, A. Le Doré, "Solution for a Scalable Audio and Speech Coder based on Core Coders", April 97, input Document MPEG97/M1997, Bristol, 1997.

J. Klaine, G. Richard, "Discrepancies between the MPEG-4 audio TTS reference software and written document (N2503, subpart 6)", input Document MPEG99/M4435, Seoul, March 1999.