

# ALEXEY OZEROV

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married,  
two children,  
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## EDUCATION

- PhD in Signal Processing,** December 2006  
University of Rennes 1, France
- MSc in applied mathematics:** DESS “Scientific Calculation and Applications”, September 2003  
University of Bordeaux 1, France
- MSc in mathematics,** department of Ordinary Differential Equations, June 1999  
Mathematics and Mechanics faculty, St. Petersburg State University, Russia

## PROFESSIONAL EXPERIENCE

- Post-Doc** in Technicolor, Cesson Sevigné, France November 2011 - present
- Post-Doc** in METISS team September 2009 - October 2011  
of IRISA / INRIA, Rennes, France
- Post-Doc** in the Signal and Image Processing Department February 2008 - July 2009  
of TELECOM ParisTech / CNRS LTCI, Paris, France
- Post-Doc** in Sound and Image Processing (SIP) Lab January - December 2007  
of KTH (Royal Institute of Technology), Stockholm, Sweden
- Preparation of PhD in Signal Processing,** November 2003 - December 2006  
France Télécom R&D, in collaboration with the METISS team of IRISA, Rennes, France
- Period of trainee,** March - September 2003  
METISS team of IRISA, Rennes, France
- R&D Software Engineer,** November 1999 - July 2002  
Terayon Communicational Systems (USA), Broadband Voice Division,  
St. Petersburg, Russia and then Prague, Czech Republic

## TEACHING ACTIVITIES

- Seminars on “Information theory and source coding” (6 hours) February 2007  
in the Royal Institute of Technology (KTH), Stockholm, Sweden.
- Seminars on “Theory of functions of a complex variable” (8 hours) March 1999  
in the Institute of Intellectual Systems and Technology (IIST), Saint-Petersburg, Russia.

## PUBLIC RESPONSIBILITIES

**Member of the organizing committee of the international signal separation evaluation campaign** SiSEC 2010 ([sisek.wiki.irisa.fr](http://sisek.wiki.irisa.fr)) with results presented at LVA/ICA'10.

**Member of the local organization committee of the international conference** "Latent Variable Analysis and Signal Separation" (LVA/ICA'10) ([lva2010.inria.fr](http://lva2010.inria.fr)), 27 to 30 September 2010 in St. Malo.

**Coordination of preparation of a European project proposal** (STREP) for FP7 (ICT Call 1: FP7-ICT-2007-1, Challenge 4: "Digital libraries and Content", Objective 1: "Digital libraries and technology-enhanced learning") with 5 European research labs (from Sweden, France, Denmark, Finland and Portugal).

**Member of the local organization committee of the international conference** "Signal Processing with Adaptative Sparse Structured Representations" (SPARS'05) ([spars05.irisa.fr](http://spars05.irisa.fr)), 16 to 18 November 2005 in IRISA/INRIA - Rennes, France.

## REVIEWING FOR JOURNALS AND CONFERENCES

- [J] IEEE Transactions on Audio, Speech and Language Processing (TASLP) - 2005,07,08,09,10,11
- [J] IEEE Journal of Selected Topics in Signal Processing (J-STSP) - 2010
- [J] IEEE Signal Processing Letters - 2011
- [J] EURASIP Signal Processing (Elsevier) - 2007,09,11
- [J] Neurocomputing (Elsevier) - 2007
- [C] IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP) - 2008,09,10
- [C] IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA) - 2011
- [C] Int. Conf. on Independent Component Analysis and Blind Source Separation (ICA) - 2005,10,12
- [C] European Signal Processing Conference (EUSIPCO) - 2009,10,11
- [C] International Conference on Music Information Retrieval (ISMIR) - 2007,09
- [C] International Workshop on Machine Listening in Multisource Environments (CHiME) - 2011
- [C] Journées d'Etude sur la Parole (JEP) - 2006

## PARTICIPATION IN INTERNATIONAL EVALUATION CAMPAIGNS

1. Third community-based Signal Separation Evaluation Campaign (SiSEC 2011)
2. The PASCAL 'CHiME' Speech Separation and Recognition Challenge (CHiME 2011)
3. Second community-based Signal Separation Evaluation Campaign (SiSEC 2010)
4. First community-based Signal Separation Evaluation Campaign (SiSEC 2008)

## FOREIGN LANGUAGES

**French, English :** fluent  
**Czech :** speaking  
**Swedish, Spanish :** beginner

## LONG TERM STAYS ABROAD

**Czech Republic :** 1.5 years  
**Sweden :** 1 year

## COMPUTER SCIENCE ABILITIES

**Languages:** C / C++, Matlab, Perl  
**Platforms:** UNIX / Linux, Windows (95, 98, NT, 2000, XP)

## EXTRACURRICULAR ACTIVITIES

**Sports:** volleyball, badminton, squash  
**Passions:** traveling, playing guitar

## PUBLICATIONS

### Submitted

1. M. Li, J. Klejsa, A. Ozerov and W. B. Kleijn, "Audio Coding with Power Spectral Density Preserving Quantization," *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP'12)*, Kyoto, Japan, March, 2012. (*submitted*)
2. M. Li, A. Ozerov, J. Klejsa and W. B. Kleijn, "Asymptotically optimal distribution preserving quantization for stationary Gaussian processes," *IEEE Transactions on Communications* (*submitted*)
3. S. Arberet, A. Ozerov, F. Bimbot and R. Gribonval, "A tractable framework for estimating and combining spectral source models for audio source separation," *Signal Processing*, special issue on "Latent Variable Analysis and Signal Separation" (*submitted*)

### Journal Articles

1. E. Vincent, S. Araki, F. Theis, G. Nolte, P. Bofill, H Sawada, A Ozerov, V. Gowreesunker, D. Lutter, N.Q.K. Duong, "The Signal Separation Evaluation Campaign (2007–2010): Achievements and remaining challenges," *Signal Processing*, special issue on "Latent Variable Analysis and Signal Separation" (*to appear*)
2. C. Blandin, A. Ozerov and E. Vincent, "Multi-source TDOA estimation in reverberant audio using angular spectra and clustering," *Signal Processing*, special issue on "Latent Variable Analysis and Signal Separation" (*to appear*)
3. A. Ozerov, E. Vincent and F. Bimbot, "A general flexible framework for the handling of prior information in audio source separation," *IEEE Trans. on Audio, Speech and Lang. Proc.* (*to appear*)
4. A. Ozerov and W. B. Kleijn, "Asymptotically optimal model estimation for quantization," *IEEE Transactions on Communications*, vol. 59, no. 4, pp. 1031-1042, April 2011.
5. A. Ozerov and C. Févotte, "Multichannel nonnegative matrix factorization in convolutive mixtures for audio source separation," *IEEE Trans. on Audio, Speech and Lang. Proc.* special issue on Signal Models and Representations of Musical and Environmental Sounds, vol. 18, no. 3, pp. 550-563, March 2010.
6. A. Ozerov, P. Philippe, F. Bimbot and R. Gribonval, "Adaptation of Bayesian models for single channel source separation and its application to voice / music separation in popular songs," *IEEE Trans. on Audio, Speech and Lang. Proc.*, special issue on Blind Signal Proc. for Speech and Audio Applications, vol. 15, no. 5, pp. 1564–1578, July 2007.
7. A. Ozerov, R. Gribonval, P. Philippe and F. Bimbot, "Choix et adaptation de modèles statistiques pour la séparation de voix chantée à partir d'un seul microphone," *Traitement du signal*, vol. 24, no. 3, pp. 211–224, 2007.

## Conferences

1. A. Ozerov, A. Liutkus, R. Badeau and G. Richard, "Informed source separation: source coding meets source separation," In *IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA'11)*, Mohonk, NY, Oct. 16-19, 2011.
2. A. Ozerov, M. Lagrange and E. Vincent, "GMM-based classification from noisy features," *International Workshop on Machine Listening in Multisource Environments (CHiME 2011)*, pages 30-35, Florence, Italy, September, 2011.
3. A. Ozerov and E. Vincent, "Using the FASST source separation toolbox for noise robust speech recognition," *International Workshop on Machine Listening in Multisource Environments (CHiME 2011)*, pages 86-87, Florence, Italy, September, 2011.
4. A. Ozerov, C. Févotte, R. Blouet and J.-L. Durrieu, "Multichannel nonnegative tensor factorization with structured constraints for user-guided audio source separation," *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP'11)*, pages 257-260, Prague, May, 2011.
5. C. Blandin, E. Vincent and A. Ozerov, "Multi-source TDOA estimation using SNR-based angular spectra," *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP'11)*, pages 2616 - 2619, Prague, May, 2011.
6. A. Ozerov, E. Vincent and F. Bimbot, "A general modular framework for audio source,separation", In *9th International Conference on Latent Variable Analysis and Signal Separation (LVA/ICA'10)*, pages 33 - 40, Saint-Malo, France, Sep. 27-30, 2010.
7. S. Araki, A. Ozerov, V. Gowreesunker, H. Sawada, F. Theis, G. Nolte, D. Lutter and N.Q.K. Duong, "The 2010 Signal Separation Evaluation Campaign (SiSEC2010): - Audio source separation -", In *9th International Conference on Latent Variable Analysis and Signal Separation (LVA/ICA'10)*, pages 114 - 122, Saint-Malo, France, Sep. 27-30, 2010.
8. S. Araki, F. Theis, G. Nolte, D. Lutter, A. Ozerov, V. Gowreesunker, H. Sawada and N.Q.K. Duong, "The 2010 Signal Separation Evaluation Campaign (SiSEC2010): - Biomedical source separation -", In *9th International Conference on Latent Variable Analysis and Signal Separation (LVA/ICA'10)*, pages 123 - 130, Saint-Malo, France, Sep. 27-30, 2010.
9. C. Févotte and A. Ozerov, "Notes on nonnegative tensor factorization of the spectrogram for audio source separation : statistical insights and towards self-clustering of the spatial cues", In *7th International Symposium on Computer Music Modeling and Retrieval (CMMR 2010)*, 2010.
10. S. Arberet, A. Ozerov, N.Q.K. Duong, E. Vincent, R. Gribonval, F. Bimbot and P. Vandergheynst, "Nonnegative matrix factorization and spatial covariance model for under-determined reverberant audio source separation", In *10th International Conference on Information Sciences, Signal Processing and their applications (ISSPA 2010)*, 2010.
11. A. Ozerov, C. Févotte and M. Charbit, "Factorial scaled hidden Markov model for polyphonic audio representation and source separation", In *IEEE Workshop on Applications of Signal Processing to Audio and Acoustics (WASPAA'09)*, pages 121-124, Mohonk, NY, Oct. 18-21, 2009.
12. 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 *EUSIPCO, 17th European Signal Processing Conference*, Glasgow, Scotland, August 24-28, 2009..
13. A. Ozerov and C. Févotte, "Multichannel nonnegative matrix factorization in convolutive mixtures. With application to blind audio source separation", In *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP'09)*, pages 3137-3140, Taipei, Taiwan, April 19-24, 2009.
14. A. Ozerov and W. B. Kleijn, "Optimal parameter estimation for model-based quantization," In *IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP'09)*, pages 2497-2500, Taipei, Taiwan, April 19-24, 2009.
15. S. Arberet, A. Ozerov, R. Gribonval and F. Bimbot, "Blind spectral-GMM estimation for underdetermined instantaneous audio source separation", In *Proc. Int. Conf. on Independent Component Analysis and Blind Source Separation (ICA'09)*, pages 751-758, Paraty, Brazil, March 15-18, 2009.

16. I. Potamitis and A. Ozerov, "Single channel source separation using static and dynamic features in the power domain," In *EUSIPCO, 16th European Signal Processing Conference*, Laussane, Switzerland, August 25-29, 2008.
17. A. Ozerov and W. B. Kleijn, "Flexible quantization of audio and speech based on the autoregressive model," In *IEEE Asilomar Conference on Signals, Systems, and Computers (Asilomar CSSC'07)*, pages 535-539, Pacific Grove, CA, Nov. 4-7, 2007.
18. R. Heusdens, W. B. Kleijn and A. Ozerov, "Entropy-constrained high-resolution lattice vector quantization using a perceptually relevant distortion measure," In *IEEE Asilomar Conference on Signals, Systems, and Computers (Asilomar CSSC'07)*, pages 2075-2079, Pacific Grove, CA, Nov. 4-7, 2007.
19. W. B. Kleijn and A. Ozerov, "Rate distribution between model and signal," In *IEEE Worksh. on Apps. of Signal Processing to Audio and Acoustics (WASPAA'07)*, pages 243 - 246, Mohonk, NY, Oct. 2007.
20. A. Ozerov, P. Philippe, R. Gribonval and F. Bimbot, "One microphone singing voice separation using source-adapted models", In *IEEE Worksh. on Apps. of Signal Processing to Audio and Acoustics (WASPAA'05)*, pages 90 - 93, Mohonk, NY, Oct. 2005.
21. A. Ozerov, R. Gribonval, P. Philippe and F. Bimbot, "Séparation voix / musique à partir d'enregistrements mono quelques remarques sur le choix et l'adaptation des modèles", In *GRETSI'05 Symposium on Signal and Image Processing*, Louvain-la-Neuve, Belgique, Sept. 2005.
22. G. Gravier, L. Benaroya, A. Ozerov, R. Gribonval and F. Bimbot, "Séparation de sources à partir d'un seul capteur pour la reconnaissance robuste de la parole", In *Journées d'Etude sur la Parole (JEP'04)*, April 2004.

#### Patents

1. A. Ozerov, C. Févotte and R. Blouet, "Automatic source separation via joint use of segmental information and spatial diversity", US patent 13021692, 2011 (*filled*).
2. S. Arberet, A. Ozerov, R. Gribonval and F. Bimbot, "Procédé et un dispositif d'estimation de signaux de source issus d'un signal de mélange", French patent 2939933, 2010 (published) and international extension WO2010/076412, 2010 (published).

#### Technical reports

1. A. Ozerov, S. Essid and M. Charbit, "Reconnaissance des instruments dans la musique polyphonique par décomposition NMF et classification SVM", Technical Report TELECOM ParisTech 2009D014, July 2009.

#### Theses

1. A. Ozerov. "Adaptation de modèles statistiques pour la séparation de sources mono-capteur. Application à la séparation voix / musique dans les chansons." PhD thesis, University of Rennes 1, 2006.
2. A. Ozerov. "Représentations robustes pour la reconnaissance automatique de la parole". MSc thesis, DESS "Scientific Calculation and Applications", University of Bordeaux 1, 2003.
3. A. Ozerov. "A criterion of nondisappearance of invariant sets satisfying Krasovsky property under C0 perturbations of right part of the system". MSc thesis, department of Ordinary Differential Equations, Mathematics and Mechanics faculty, St. Petersburg State University, 1999.