Dr. Paul Magron

Postdoctoral Researcher

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https://magronp.github.io/

Current position

Since 10/2019 **Postdoctoral researcher**, *IRIT, Université de Toulouse, CNRS*, Toulouse, France.
Representation learning, as part of the ERC project FACTORY.

Professional experience

2017 - 2019 **Postdoctoral researcher**, *Tampere University*, Tampere, Finland.
Audio/music source separation, phase-aware probabilistic models, deep learning.
Real-time speech separation in a collaborative project with the Eriksholm Research Center (Denmark).

2013 - 2016 **Ph.D.**, *Télécom ParisTech, Signal and Image Processing department*, Paris, France.
Audio source separation, phase recovery, time-frequency analysis, probabilistic models (anisotropic Gaussian, alpha-stable), nonnegative matrix factorization.

04/2013 - 08/2013 **Research intern**, *Centro de Investigacion en Tecnologias de Audio*, Santiago, Chile.
Complex resonator acoustics, digital filter design, sound synthesis.

09/2011 - 08/2012 **Trainee engineer**, *Airbus - Propulsion Integration Domain*, Toulouse, France.
Propulsion systems weight management, modeling of water hammer pressure surge observed during engine start.

05/2010 - 07/2010 **Research Assistant**, *UR NAVIER Research Center*, Paris, France.
Straw balls as an ecological construction material - Mechanical analysis of composite panels.

Awards

September 2018 Best Paper Award at IWAENC 2018 for the paper titled “Towards complex nonnegative matrix factorization with the beta-divergence", by P. Magron and T. Virtanen.

Teaching activities

2018 - 2019 **Teaching assistant**, *Tampere University*, Tampere, Finland.
Advanced audio signal processing: lecture, exercise sessions, project supervision.
Introduction to audio signal processing: exercice sessions, project supervision.

2014 - 2016 **Teaching assistant**, *Télécom ParisTech*, Paris, France.
Total: 64h per academic year.
Nonnegative Matrix Factorization: lecture and practical sessions.
Fundamentals of psychoacoustics: lecture.
Supervisor for first-year final projects.
Supervisor for first-year engineering student projects.

Education

2013 - 2016 **Ph.D.**, *Télécom ParisTech, Signal and Image Processing department*, Paris, France.
Thesis: Phase recovery based on signal modeling: application to audio source separation.

July 2016 **Summer school in Image and Signal processing**, *GRETSI*, Peyresq, France.
Probabilistic modeling and Bayesian inference in signal and image processing.

2012 - 2013 **Master of sciences**, *Université Pierre et Marie Curie, Télécom ParisTech and IRCAM*, Paris, France.
Acoustics, Signal Processing and Computer Science applied to Music (ATIAM).
Thesis: Modeling and simulation of the Antara, a Latin American closed-end pan flute.

2009 - 2011 **Engineering degree**, *École des Ponts ParisTech*, Paris, France.
Majors: materials, structures and fluids mechanics.
Minors: acoustics, thermodynamics, aerodynamics.

2007 - 2009 **Preparatory school to French “Grandes Écoles”**, *Lycée Pierre de Fermat*, Toulouse, France.
Majors: mathematics, physics and computer science.

2007 **Baccalaureate in sciences and mathematics**, *Lycée Pierre de Fermat*, Toulouse, France.
Major in mathematics, graduated with first class honors.

Reviewing services

Journals IEEE Transactions on Audio, Speech, and Language Processing, IEEE Transactions on Signal Processing, IEEE Signal Processing Letters, IEEE Access, Eurasip journal, Speech communications, Multimedia Systems, MDPI.

Conferences IEEE International Conference on Audio, Speech, and Signal Processing (ICASSP), Digital Audio Effects (DAFx) conference, International Workshop on Acoustic Signal Enhancement (IWAENC), Interspeech.

Agencies Czech Science Foundation.

Miscellaneous

Computer science skills
Programming: Python, Matlab (advanced), Faust, C++ (to reactivate)
OS: GNU/Linux, Windows
Office: LaTeX, LibreOffice

Languages
French: native
English: fluent
Spanish: fluent
Finnish: beginner

Personal interests
Electric guitar: fifteen years of practice, on-stage performances.
Taekwondo: seven years of practice, black belt (1^{st} Dan). Sparring and technical competitions.

Referees

`Cédric Févotte` cedric.fevotte@irit.fr - Postdoc supervisor
Professor - IRIT, Université de Toulouse, CNRS, France

`Tuomas Virtanen` tuomas.virtanen@tuni.fi - Postdoc supervisor
Professor - Audio Research Group, Tampere University, Finland

`Roland Badeau`, roland.badeau@telecom-paristech.fr - Ph.D. supervisor
Professor - Image, Data, Signal department, Télécom ParisTech, France

Selected publications

Full list available at `https://scholar.google.co.uk/citations?user=67-Uh0cAAAAJ&hl=en`

Journals

P. Magron, T. Virtanen, “Online spectrogram inversion for audio source separation", *IEEE Signal Processing Letters*, vol. 27, pp. 306–310, January 2020.

P. Magron, T. Virtanen, “Complex ISNMF: a phase-aware model for monaural audio source separation", *IEEE/ACM Transactions on Audio, Speech and Language* , vol. 27, no. 1, pp. 20–31, January 2019.

P. Magron, R. Badeau, B. David, “Model-based STFT phase recovery for audio source separation", *IEEE/ACM Transactions on Audio, Speech and Language Processing*, vol. 26, no. 6, pp. 1095–1105, June 2018.

Conferences

P. Magron, T. Virtanen, “Towards complex nonnegative matrix factorization with the beta-divergence", *Proc. IWAENC*. September 2018.

P. Magron, T. Virtanen, “Bayesian anisotropic Gaussian model for audio source separation", *Proc. IEEE ICASSP*. April 2018.

P. Magron, K. Drossos, S. I. Mimilakis, T. Virtanen, “Reducing interference with phase recovery in DNN-based monaural singing voice separation", *Proc. Interspeech*. September 2018.

P. Magron, J. Le Roux, T. Virtanen, “Consistent anisotropic Wiener filtering for audio source separation", *Proc. IEEE WASPAA*. October 2017.

P. Magron, R. Badeau, A. Liutkus, “Lévy NMF for robust nonnegative source separation", *Proc. IEEE WASPAA*. October 2017.