

Current position

Since 2021 **Research scientist**, *INRIA Nancy Grand-Est, Multispeech team*, Nancy, France
Signal processing and machine learning applied to audio (sound source separation, speech enhancement) and astronomy imaging (globular cluster analysis).

Professional experience

2019 - 2021 **Postdoctoral researcher**, *IRIT, Université de Toulouse, CNRS*, Toulouse, France
Hybrid deep learning for content-aware music recommendation.

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, nonnegative matrix factorization.

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

2011 - 2012 **Trainee engineer**, *Airbus - Propulsion Integration Domain*, Toulouse, France
Propulsion systems weight management, modeling of the water hammer pressure surge at engine start.

2010 **Research Assistant**, *UR NAVIER Research Center*, Paris, France
Mechanical analysis of straw balls composite panels.

Supervision

PhD students **Orane Dufour**, *co-supervised with E. Vincent and M. Rouvier*, 2024 - 2027
Towards a comprehensive speech anonymization framework.

Mayank Mishra, *co-supervised with R. Serizel*, 2024 - 2027
Semantic segmentation of audio soundscapes on edge devices.

Nasser-Edine Monir, *co-supervised with R. Serizel*, 2022 - 2026
Multichannel speech enhancement for patients with auditory neuropathy spectrum disorders.

Postdocs **Marina Krémé**, *co-supervised with A. Deleforge*, 2022 - 2023
Phase retrieval and optimal transport for audio restoration.

M2 interns **Charles Franchi**, *co-supervised with M. Andreatta, F. Jacquemard, and P. Lascabettes*, 2025
Mathematical morphology and machine learning for computational music analysis.

Louis Lalay, *co-supervised with M. Sadeghi*, 2023
Dictionary learning for deep speech separation.

Louis Bahrman, *co-supervised with A. Deleforge*, 2022
Repairing audio signals using compact phase-aware models.

Teaching

Since 2021 **Teaching assistant**, *Université de Lorraine*, Nancy, France
Neural networks (lecture + programming), automatic speech recognition (programming)

2018 - 2019 **Teaching assistant**, *Tampere University*, Tampere, Finland
Advanced audio signal processing (lecture + programming + projects), Introduction to audio signal processing (programming + projects).

2014 - 2016 **Teaching assistant**, *Télécom ParisTech*, Paris, France
Nonnegative Matrix Factorization (lecture + programming), fundamentals of psychoacoustics (lecture), first-year collaborative and final projects supervision.

Distinctions

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.

Funding

- 2026 Funding from the Action Spécifique Numérique (ASNUM, CNRS-INSU) for a collaborative project with Observatoire Astronomique de Strasbourg.
- 2020 Short-term mobility grant from the Maupertuis program for France-Finland scientific collaboration.

Scientific evaluation

- PhD jury **Pierre-Hugo Vial**, supervised by C. Févotte, defended on 29/11/2022, IRIT, Toulouse, France
Phase retrieval and audio signal reconstruction with non-quadratic cost functions.
- PhD Member of 2 PhD committees (“*comité de suivi individuel*”) since 2023
- MSc Reviewer for the ATIAM (Sorbonne University) and NLP (Université de Lorraine) MSc programs.

Reviewing activities

- 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, Journal of Computational and Graphical Statistics.
- Conferences IEEE ICASSP, IEEE WASPAA, DAFx, DCASE, IWAENC, Interspeech.
- Funding agencies Czech Science Foundation (Czech republic). MITACS internship program (Canada).

Academic services

- 2026 Member of a selection committee for an associate professor position (Université de Lorraine).
- 2026 Jury member for the Natural Language Processing M2 program (Université de Lorraine).
- Since 2022 Member of the INRIA commission for Scientific Information & Edition (IES) (since 2022).
- 2021 Organizer of a special session at IEEE IJCNN 2021 on “Representation Learning for Audio Processing”.

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.
- 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**, *Sorbonne University*, *Télécom Paris*, 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
Major in mechanical engineering. Strength of materials, structural mechanics, fluid dynamics, acoustics.
- 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.

Languages

- Programming Python (advanced), Matlab/Octave (advanced), C++ (beginner), Faust (to reactivate).
- Natural French (native), English (fluent), Spanish (fluent), Chinese (beginner), Finnish (beginner).

Personal interests

- Music I have been playing the electric guitar for 20+ years, mostly in jazz and progressive rock/metal. I am a student at the conservatory, where I currently study jazz, and previously was a student in the classical curriculum (music theory/*solfège* and composition).
- Martial arts / combat I have trained in taekwondo for 10+ years and am a black belt (2nd Dan). I competed in technical and sparring competitions, and I occasionally assisted my instructor for teaching. I started practicing Muay Thai one year ago.