



Clément Gaultier

Ph.D. specialized in Acoustic & Audio Signal Processing
M.Sc. Research in Acoustics
Graduate Engineer specialized in Vibrations – Acoustics – Sensors

Scientific Background & Interests

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|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hearing Research | Speech in Noise. <ul style="list-style-type: none">○ Listening experiments, stimuli calibration○ Speech intelligibility○ Adaptation to noise | Signal Processing | Acoustic and Audio. <ul style="list-style-type: none">○ Multichannel sparse audio reconstruction○ Time-frequency modeling○ Real-time algorithm design |
| Machine Learning | Sound Source Localization. <ul style="list-style-type: none">○ Binaural sound source localization, HRTF○ Sound propagation modeling, acoustic sensing○ Virtually supervised learning, massive regression | | |

Education

- 2019 **Ph.D. specialized in acoustic & audio signal processing**, *Université de Rennes 1, Rennes, Research.*
Design and evaluation of sparse models and algorithms for audio inverse problems
 - Graduated in: January 2019
 - Supervisors: Dr. Nancy Bertin & Dr. Rémi Gribonval
 - Projects: acoustic & audio signal processing inverse problems
 - denoising, declipping, dereverberation,
 - structured (co)sparsity for time-frequency modeling,
 - non-convex optimization algorithms,
 - virtually supervised learning for binaural sound source localization.
 - multichannel real-time audio reconstruction
- 2015 **Master 2 Acoustics**, *Le Mans Université, Le Mans, Research, with Honours.*
 - A University Master of Science under the authority of the French Ministry of Education and Research
 - Graduated in: October 2015
 - Specialized in: acoustics
 - Project: Characterization of inhomogeneous membranes vibrations (psychoacoustic descriptors, spectrum analysis, vibration behaviour)
- 2015 **Acoustics and vibrations graduate engineer**, *ENSIM - École Nationale d'Ingénieurs du Mans, Le Mans, Spécialité Acoustique - Vibration - Capteurs.*
 - A selective Engineering School in three years under the authority of the French Ministry of Education and Research delivering a postgraduate degree in engineering
 - Graduated in: October 2015
 - Specialized in: vibration, acoustics, sensors
 - Projects: With ONERA the French Aerospace Lab (acoustic measurements, signal processing, BEM modelling, correlation techniques)
- 2010–2012 **Diplôme d'Études Universitaires Générales**, *Le Mans Université, Le Mans, Physique.*
 - A two-year university degree specialized in: Computing, Optics, Mathematics, Mechanics
 - Projects: Creation of a graphic user interface to interact with a NAO robot through WiFi
- 2009–2010 **One year preparatory class**, *Lycée Montesquieu, Le Mans.*
 - Specialized in: Mathematics, Physics and Engineering Sciences

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in clement-gaultier • 28 years old

2007–2009 **Baccalauréat Scientifique, section Européenne (mention bien)**, *Lycée Marguerite Yourcenar*, Le Mans, *with Second Class Honours*.

- French baccalaureate: French high school diploma (European section with additional courses taught in english)
- Specialized in: Science (Mathematics, Physics, Earth & life science)

Professional Experience

Current position **Postdoctoral researcher**, *Orange, Orange Labs*, Cesson-Sévigné, *Research*.

- Project: Distributed audio in the context of inter-personal communication

Feb. 2019–Aug. 2019 **Research Engineer**, *Inria Rennes research center*, Rennes, *Research & development*.

- Projects: audio restoration transfer of technology
 - pop noise removal,
 - multichannel declipping,
 - DSP algorithms code conversion,
 - listening tests.

Nov. 2015–Jan. 2019 **Ph.D. student specialized in acoustic & audio signal processing**, *Inria Rennes research center*, Rennes, *Research*.

- Early stage researcher
- Projects: acoustic & audio signal processing inverse problems
 - digital sound processing,
 - non-convex optimization algorithms,
 - machine learning for binaural sound source localization,
 - science popularization.
- Teaching, mentoring & evaluation
 - Teaching wave physics tutorials - acoustics, electromagnetics, optics - for second year students (INSA Rennes public school of engineering delivering a postgraduate degree in engineering),
 - Mentoring undergrads students on a room acoustics project,
 - Jury member for final year students graduating as sound engineers from ESRA Bretagne school.

March 2015–Sept. 2015 **Post-graduate visiting student**, *Institute of Sound and Vibration Research*, Southampton, University of Southampton.

- Research work on the auditory system, hearing in noise, speech intelligibility, signal processing
- Supervisors: Dr. Jessica J. M. Monaghan & Dr. Stefan Bleack
- Setting up listening experiments for people with normal hearing
 - noisy speech stimuli calibration,
 - ethical study / noise exposure validation,
 - statistical analysis,
 - participants recruitment.

July 2014 **Industrial machine operator**, *Renault*, Le Mans, Renault Le Mans' Factory.
Production line loading, quality control tasks.

July 2013 **Internship: worker**, *Renault*, Le Mans, Renault Le Mans' Factory.
Handling, cleaning and control.

2011–2014 June & July **Ticket inspector, controller**, *Automobile Club de l'Ouest*, Le Mans.

Hire based on personality, foreign language speaking skills to welcome a British public
Inform & inspect the tickets of car race spectators

July & August 2010 **Temporary Worker**, *SCIE*, Trangé.

Part time work for an industrial oil recycling company
Stocktaking, storing, cleaning & dismanteling before warehouse relocation

Languages

French Native language

English Fluent

- Obtained from doing numerous trips in English-speaking countries (England, Wales, Malta, Canada)
- Scored 945 out of 990 and 900 out of 990 points on TOEIC test in April 2012 and May 2014

Spanish Basic knowledge

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Computer skills

Programming	C, C++, bash, python, distributed computing (OAR)	Scientific softwares	MatLab, Labview, COMSOL, LMS VirtualLab, LMS TestLab
Operating Systems	macOS, Windows, Linux	Office softwares	Microsoft Suite, LibreOffice Suite, \LaTeX
Computer Assisted Design	SolidWorks, Catia	Web	Html, CSS, CMS, WordPress, Jekyll

Interests

- 2008–Now **Club Alpin Français.**
Rock-climbing, bouldering, skiing in a mountain sport association
- July 2012 **Ecole de musique de l'Antonnière, Sarthe, FRANCE.**
Project : Setting up of a music summer camp with acting, music, songs and a background story
- 2010–2012 **University Jazz Band.**
Playing the saxophone, performing concerts
- 1999–2009 **Music Schools.**
Learning & playing the saxophone, Singing in a choir

Extra

- o Driving license

Publications

C. Gaultier, “Design and evaluation of sparse models and algorithms for audio inverse problems,” Ph.D. dissertation, Université de Rennes 1, Jan. 2019.

R. Lebarbenchon, E. Camberlein, D. Di Carlo, **C. Gaultier**, A. Deleforge, and N. Bertin, “Evaluation of an open-source implementation of the SRP-PHAT algorithm within the 2018 locata challenge,” in *2018 16th International Workshop on Acoustic Signal Enhancement (IWAENC), LOCATA Challenge*. IEEE, 2018.

C. Gaultier, N. Bertin, and R. Gribonval, “CASCADE: Channel-Aware Structured CosparsE Audio DEclipper,” in *2018 IEEE International Conference on Acoustics, Speech and Signal Processing*, 2018.

C. Gaultier, S. Kitić, N. Bertin, and R. Gribonval, “AUDASCITY: AUdio Denoising by Adaptive Social CosparsITY,” in *2017 25th European Signal Processing Conference (EUSIPCO)*. IEEE, 2017, pp. 1265–1269.

C. Gaultier, S. Kitić, N. Bertin, and R. Gribonval, “CosparsE denoising: The importance of being social,” in *The Signal Processing with Adaptive Sparse Structured Representations (SPARS) workshop*, 2017.

C. Gaultier, S. Kataria, and A. Deleforge, “VAST: The Virtual Acoustic Space Traveler dataset,” in *International Conference on Latent Variable Analysis and Signal Separation*. Springer, 2017, pp. 68–79.

S. Kataria, **C. Gaultier**, and A. Deleforge, “Hearing in a shoe-box: binaural source position and wall absorption estimation using virtually supervised learning,” in *2017 IEEE International Conference on Acoustics, Speech and Signal Processing*. IEEE, 2017, pp. 226–230.

R. Gokula, **C. Gaultier**, J. J. M. Monaghan, and S. Bleack, “Acclimatization to different english accents for enhanced speech intelligibility in noise in individuals with normal hearing,” in *Basic Auditory Science Meeting*. British Society of Audiology, 2015.

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