RAPHAËL LEIBA

Doctor in Acoustics
Faculty of Science and Engineering - Sorbonne University

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RESEARCH

Postdoctoral Teaching Fellowship

Jean le Rond ∂'Alembert Institute & STMS-IRCAM
Sorbonne University

📅 Jan 2018 – Aug 2019   📍 Saint-Cyr-l'École & Paris

- Improvements in classifying road traffic vehicles (Machine Learning);
- Psychoacoustic tests for noise annoyance modelling;
- Psychoacoustic indices model development (open-source project in progress).

PhD in Acoustics

Jean le Rond ∂'Alembert Institute & STMS-IRCAM
Sorbonne University

📅 Sep 2014 – Dec 2017   📍 Saint-Cyr-l'École & Paris

Title: Noise annoyance diagnostic tool conception in urban areas
Funding: Chair of Excellence "Mobility and life quality in urban areas"

- Use of microphone array for isolating noise source from road traffic in urban environment (Megamicros project);
- Audio signal classification over perceptual categories of vehicles;
- Noise annoyance estimation associated to each vehicle using psycho-acoustic indices and model.

Internships

📅 Mar – Aug 2014   **Jean le Rond ∂'Alembert Institute - UPMC**
Noise mapping in urban areas: Megamicros deployment on Jussieu campus

📅 Apr – Aug 2013   **UME - ENSTA ParisTech**
Characterisation of damping and associated radiated noise for visco-elastic materials

TEACHING *(580 HOURS)*

Faculty of Science and Engineering - Sorbonne University
BSc in Mecanics & MSc in Mechanical Engineering

📅 Sep 2014 – Aug 2019   📍 Saint-Cyr-l'École – Jussieu

- Introduction to Mechanics (BSc – lectures and seminars)
- Vibration and Stability (BSc – seminars & practical works)
- Matlab Programming (BSc – practical works)
- Waves propagation (BSc – seminars)
- Vibrations & Waves (MSc – seminars & practical works)
- Project supervisions in Acoustics or Machine Learning (MSc)

KEYWORDS

Acoustics   Urban road traffic
Inverse problems   Vibrations
Signal Processing   Microphone Array
Machine Learning   Noise Annoyance
Computer Vision Processing

EDUCATION

PhD in Acoustics

∂'Alembert / STMS
Pierre et Marie Curie University

📅 Sep 2014 – Dec 2017

Title: Noise annoyance diagnostic tool conception in urban areas

MSc in Mechanical Engineering

Specialty: Industrial & environmental acoustics
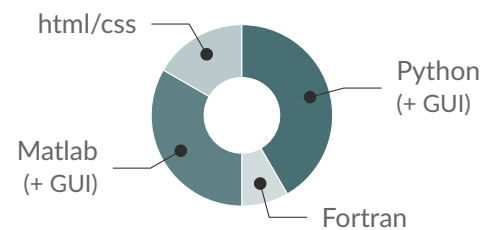
Pierre et Marie Curie University

📅 Sep 2012 – Aug 2014

BSc in Mechanics

Pierre et Marie Curie University

📅 Sep 2009 – Jun 2012

PROGRAMMING

html/css   Python (+ GUI)   Matlab (+ GUI)   Fortran

LANGUAGES

French, mother tongue ●●●●●

English, B2 level ●●●●○

Spanish, A2 level ●●○○○

PUBLICATIONS

📄 Journal Articles

[2] **R. Leiba**, F. Ollivier, J. Marchal, N. Misdariis, and R. Marchiano, "Utilisation d'antennes à grand nombre de microphones pour la reconnaissance automatique de sources sonores en environnement urbain", *Acoustique & Technique*, Nov. 2017.

[1] **R. Leiba**, F. Ollivier, J. Marchal, N. Misdariis, and R. Marchiano, "Road traffic monitoring in urban area using large arrays of microphones", *Acta Acustica united with Acustica*, Soon submitted.

👥 Conference Proceedings

[9] N. Misdariis, L. Marignier, C. Dianoux, and **R. Leiba**, "Community noise quality assessment (annoyance) by means of a virtual audio environment", Madrid, Jun. 2019.

[8] N. Misdariis, L. Marignier, C. Dianoux, and **R. Leiba**, "Experimental validation of uurban traffic noise annoyance model", in *ICSV26, 26th International Congress on Sound and Vibration*, Montreal, Jul. 2019.

[7] **R. Leiba**, F. Ollivier, J. Marchal, N. Misdariis, and R. Marchiano, "Large array of microphones for the automatic recognition of acoustic sources in urban environment", in *InterNoise*, Hong-Kong, 2017.

[6] **R. Leiba**, F. Ollivier, R. Marchiano, N. Misdariis, and J. Marchal, "Imagerie acoustique en milieu urbain : De la mesure à la perception du paysage sonore", in *CFA / VISHNO 2016*, 2016.

[5] **R. Leiba**, F. Ollivier, R. Marchiano, N. Misdariis, and J. Marchal, "Urban acoustic imaging : From measurement to the soundscape perception evaluation", in *INTER-NOISE*, 2016.

[4] R. Marchiano, P. Druault, **R. Leiba**, J. Marchal, F. Ollivier, V. Valeau, and C. Vanwynsberghe, "Localisation de sources aéroacoustiques par une méthode de retournement temporel tri-dimensionnelle", in *CFA / VISHNO 2016*, (sans acte), 2016.

[3] **R. Leiba**, F. Ollivier, R. Marchiano, N. Misdariis, and J. Marchal, "Imagerie acoustique en milieu urbain : De la mesure à la perception du paysage sonore", in *JJCAB 2015*, Poster, 2015.

[2] J. Marchal, M. Legris, I. Mopin, A.-L. Verneil, **R. Leiba**, M. Garot, M. Dana, and L.Robert, "Sonar latéral à but pédagogique", in *Congrès Français d'Acoustique*, 2014.

[1] N. Misdariis, R. Marchiano, P. Susini, F. Ollivier, **R. Leiba**, and J. Marchal, "Mobility and life quality relationships – measurement and perception of noise in urban context", in *INTER-NOISE*, Melbourne, 2014.

MENTORING

📅 2018 **Alice Thiault & Séverine Tran-Thanh**
Localisation and recognition of sound sources on a construction site using microphone array

📅 2018 **Lucie Marignier**
Psychoacoustic experiment for the validation of a noise annoyance model in urban environments

📅 2017 **Florent Bensa & Hamza Hadadia**
Road traffic vehicle classification based on machine learning using the vehicle audio signal

📅 2016 **Hadrien Pujol**
High resolution acoustic imaging in urban environment

📅 2015 **Hugo Demontis & Jiabin Qu**
Noise level evaluation in a complex 3D sound scene using `code_TYMPAN` software

INVOLVEMENTS

PhD students representant at the laboratory council
Jean le Rond ∂'Alembert Institute
📅 Mar 2016 – 2017

Organisation of the "∂'Alembert days"
Jean le Rond ∂'Alembert Institute
📅 Jun 2016 & Jul 2017

Laboratory workshops – 2 days – 100 participants

Set-up of ∂'Alembert Youtube channel & Seminars live broadcasting system
Jean le Rond ∂'Alembert Institute
📅 Jul 2017 – today   ▶ DAlembert-SU-CNRS

Webmaster for the ILASS19 conference
29th European Conference on Liquid Atomisation and Spray Systems
📅 2-4 Sep 2019   📍 Paris, France