Pierre-Amaury Grumiaux

Contact

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Nantes, France

http://pagrumiaux.fr/
(publications, music)

Hard Skills

Theoretical

- Musical acoustics, psychoacoustics, spatial audio
- Audio signal processing, machine learning, deep learning

Computer science

- Python: Pytorch, Tensorflow, Keras, Librosa, Numpy, Scipy, Flask
- C++: Juce
- Matlab, Faust
- HTML, CSS, PHP, Javascript

Music

- Piano (+20 years), music theory
- Music production (Ableton Live), sound synthesis, mixing, mastering

Languages

- French (native), English (TOEIC: 940/990)

Soft Skills

- Curious and creative
- Autonomous, rigorous, organized
- Good relational skills
- High motivation for music innovation

Education Background

2018 – 2021 **PhD degree**
GIPSA-lab, Grenoble

2017 – 2018 **Research master**
Acoustics, audio signal processing and computer music (ATIAM)
Sorbonne Universités, Paris

2013 – 2017 **Engineering degree**
Computer science
Centrale Lille, Lille

2011 – 2013 **Higher school preparatory classes**
Lycée Marcelin Berthelot, Saint-Maur

About Me

Educated as an academic researcher in the audio field, I am looking for a research engineer position in the audio/music industry. The audio world is endlessly changing with the advent of new technologies and I would like to contribute to this evolution using my technical skills, which include both high scientific background and musical training. I am convinced that combining my knowledge in both domains could be beneficial to get the most from those exciting areas.

Professional Experience

LS2N, Centrale Nantes | Postdoctoral researcher
2022 – 2023

Bandwitch extension of musical signals with differentiable models

- State-of-the-art review of bandwidth extension methods
- Design and evaluation of several DDSP models for monophonic and polyphonic bandwidth extension
- Supervision of master student projects

Orange Labs & GIPSA-lab | PhD researcher
2018 – 2021

Deep learning for speaker counting and localization with Ambisonics signals

- State-of-the-art review of sound source counting and localization
- Preparation of datasets including multichannel multi-source speech signals with reverberation and noise in Ambisonics format
- Deep learning models for speaker counting, speaker localization and hybrid methods : CNN, RNN, CRNN, ResNet, self-attention
- Investigations regarding a novel 3D audio representation
- Co-supervision of research internships

IRCAM | Research intern
Feb. – Jul. 2018

Automatic drums transcription with deep learning

- State-of-the-art review of automatic music transcription methods
- Design and evaluation of several methods for automatic drums transcription
- Design and evaluation of multi-modal models including beats and downbeats information
- Design and evaluation of models based on student-teacher paradigms

Audionamix | Research intern
Apr. – Aug. 2017

Audio-to-lyrics alignment for polyphonic music

- State-of-the-art review of lyrics-to-audio alignment methods
- Preparation of training and test datasets
- Design and evaluation of different methods based of DTW and HMM

CCRMA & Mines ParisTech | Research intern
Jun. – Aug. 2016

Physical modeling based sound synthesis with Faust

- Python tools for generating Faust physical models