

Pierre-Amaury GRUMIAUX

Audio machine learning engineer



Contact

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Hard Skills

Audio & signal processing

- Music information retrieval (MIR)
- Classification audio & tagging
- Speech processing
- Spatial audio

Machine learning and deep learning

- PyTorch, Tensorflow
- Architectures: CNN, RNN, Transformers, autoencoders
- Supervised, unsupervised learning
- Optimization: quantization, compression, ONNX, TFLite

MLOps & development

- Data pipelines
- Production deployment & embedded systems optimization
- Model evaluation, versioning, CI/CD

Programming tools

- Python (signal and audio libraries)
- C++, Matlab, Faust
- Git, Linux, cloud computing (AWS)

Music

- Piano (+25 years), music theory
- DAWs, synthesizers, sound design, mixing, mastering

Soft Skills

- Technical leadership | Autonomous | Problem-solver
- Cross-functional collaboration | Rigorous | Scientific and cultural curiosity (music, visual arts)

Education

2018 – 2021 **PhD | Universités Grenoble Alpes**
Deep learning for speaker counting and localization with Ambisonics

2017 – 2018 **Research master ATIAM | IRCAM & Télécom Paris**
Acoustics, audio signal processing and computer music

2013 – 2017 **Engineering | Centrale Lille**
Computer science & computer music specialization

Hobbies

Volleyball (national level competitions), music making, science & history books, museums, chess, nature exploration, hiking

About Me

Audio ML Engineer with a strong research foundation (PhD, postdoc) and practical experience shipping deep learning models for real-time audio applications on embedded devices. I'm driven by the convergence of AI and audio/music technology, and I thrive in environments where I can push both research boundaries and production quality. My 25+ years as a pianist and my work in music production fuel my passion for this field.

Professional Experience

Sonaid | Audio ML engineer

2024 – present

- Built end-to-end deep learning pipeline from scratch: dataset creation with custom annotations and audio augmentation strategies, model architecture, training, and evaluation with custom metrics **50h+ data, 94%+ accuracy**
- Optimized models for embedded systems through compression, quantization, latency reduction, and memory optimization while balancing accuracy vs. computational constraints **4 Mo RAM for an accuracy loss of 5%**
- Prepared and deployed models for production environments
- Led technical strategy: defined AI roadmap, prioritized features, and integrated customer feedback into model improvements
- Collaborated cross-functionally with product, hardware, and backend teams while maintaining technical documentation
- Set up and managed cloud GPU instances for training/deployment

LS2N, Centrale Nantes | Postdoctoral researcher

2022 – 2023

Bandwidth extension of musical signals with differentiable models

- Designed and implemented deep learning architectures combining DDSP and neural vocoders for high-frequency reconstruction of musical signals
- Conducted evaluation framework combining objective metrics and subjective listening tests across diverse musical content (genres, instruments)
- HPC clusters, SLURM job scheduling, data pipeline optimization

Orange Labs & GIPSA-lab | PhD researcher

2018 – 2021

Deep learning for speaker counting and localization with Ambisonics signals

- Designed and trained deep learning models (CNN, RNN, CRNN, ResNet, Transformers) for multi-speaker counting and spatial localization in realistic conditions (reverberation, noise)
- Created multi-source, multi-channel spatial audio datasets in Ambisonic format for model training and evaluation
- Developed an innovative 3D audio signal representation, advancing the state-of-the-art in spatial audio processing
- Published research findings in international conferences (EUSIPCO, WASPAA, etc.)

IRCAM | Research intern

Feb. – Jul. 2018

Automatic drums transcription with deep learning

Audionamix | Research intern

Apr. – Aug. 2017

Audio-to-lyrics alignment for polyphonic music

CCRMA & Mines ParisTech | Research intern

Jun. – Aug. 2016

Physical modeling based sound synthesis with Faust