

Leonardo Boulitreau

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About

I make machines that sing, speak, play, and hear! I am a researcher specialized in AI for audio, with over six years of R&D experience and a strong background in signal processing. My research focuses on controllable and interpretable generative models, particularly on expressive (singing) voice transformation.

Experience

PhD Researcher

Paris

@Institut Polytechnique de Paris

10/25 – Current

- Developed a self-supervised pitch style transfer framework using complementary temporal and time-agnostic representations to disentangle and transfer expressive singing pitch ornaments (e.g. vibrato, glissando) (*ICASSP 2027*).
- Designed flexible conditioning mechanisms for text-guided music generation and editing, supporting multiple generation and editing tasks within a unified framework (*ICASSP 2027*).
- **Tutoring:** Deep Learning.

Research Engineer

Paris

@Télécom Paris

04/25 – 07/25

- Audio909: Automated professional recording of a piano dataset and development of a music generation framework leveraging tokenized representations and musical structure-informed stochastic positional encoding (*TISMIR*).

Researcher

São Paulo

@CPQD

04/23 – 03/25

- Improved a hybrid ASR by adapting its LM on synthetic domain-specific text generated by LoRA of LLMs.
- Evaluated fairness of the company's ASR on multi-accented speech in the Brazilian Portuguese language.
- Enriched the company's call center customer profiler by developing a SOTA speech emotion, age and gender classifier.

Fellow Master

São Paulo

@CPQD

08/21 – 04/23

- Implemented neural expressive TTS models for the Brazilian Portuguese language with fine-grained control.
- Crowdsourced perceptual experiments to evaluate naturalness, emotion, and speaker similarity.

Internship

São Paulo

@Federal University of Paraíba

06/20 – 12/20

- Designed a speech command recognition system in a local private LoRa network for IoT applications.
- Enabled long-distance voice control by developing a wearable prototype with an embedded microphone.

Skills

Deep Learning: PyTorch, Tensorflow, Lightning, HuggingFace, ONNX, Gradio, MLFlow

Programming: Python, C, C++, MATLAB, LaTeX, Bash, Docker, Git, Kubernetes

Languages: Portuguese, English, French

Education

M.Sc in Electrical Engineering (GPA: 5.0/5.0)

08/21 – 06/24

State University of Campinas

- **Thesis:** Cross-Speaker Style Transfer for TTS with Singing Voice Conversion Data Augmentation, Style Filtering, and F0 Matching.

Excellence Scholarship Exchange Student

09/19 – 06/20

Télécom Paris

- **Courses:** Machine Learning, Statistics, Optimization, Digital Signal Processing.

B.Sc in Electrical Engineering (GPA: 4.2/5.0)

03/15 – 01/21

Federal University of Paraíba

- **Thesis:** Cooperative Spectrum Sensing based on Skewness Statistical Tests.
- **Research:** Fluid Velocity Estimation via the Extended Kalman Filter.
- **Tutoring:** Differential and Integral Calculus.