Leonardo Boulitreau

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About

I am a researcher in the intersection of artificial intelligence and audio, with over 4 years of experience and a solid background in signal processing.

Experience

AI Audio Researcher *São Paulo, Brazil*
CPQD *May 2023 – Current*

- 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.
- Developed an accurate and efficient two-stage SSL-based speech emotion recognition system.
- Enriched the company's call center customer profiler by developing a SOTA speech age and gender classifier.

AI Audio Fellow Master *São Paulo, Brazil*
CPQD *Aug 2021 – April 2023*

- Implemented neural customer-oriented expressive TTS models for the Brazilian Portuguese language.
- Enabled customers to edit synthesized audios with character-level prosody control on the ONNX FastPitch.
- Conducted perceptual experiments to evaluate speech naturalness, emotion intensity, and speaker similarity.

AI Audio Internship *São Paulo, Brazil*
Federal University of Paraíba *June 2020 – Dec 2020*

- Enhanced lab automation by designing neural speech commands recognition systems.
- Encapsulated the 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 *Aug 2021 – June 2024*
State University of Campinas

- GPA: 5.0/5.0
- **Thesis:** Cross-Speaker Style Transfer for TTS with Singing Voice Conversion Data Augmentation, Style Filtering, and F0 Matching.

Excellence Scolarship Exchange Student *Sep 2019 – June 2020*
Télécom Paris

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

B.Sc in Electrical Engineering *March 2015 – Jan 2021*
Federal University of Paraíba

- GPA: 4.2/5.0
- **Research:** Wind Velocity Estimation via the Extended Kalman Filter.
- **Tutoring:** Differential and Integral Calculus.