

JUAN PABLO ZULUAGA

Ph.D. Student in Computer Science & Automatic Speech Recognition

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EXPERIENCE

Machine Learning Engineer—Internship

Apple - AI/ML Team

📅 July – September 2023

📍 Cambridge, MA, USA

- Working on discriminative training of language models to improve automatic speech recognition (ASR) performance on tail entity data

Applied Scientist—Internship

Amazon - Amazon Web Services (AWS)

📅 April – July 2023

📍 Seattle, WA, USA

- Research on dual speech Translation (ST) and Transcription (ASR) for conversational speech with serialized output training & special tokens
- Our system is aware of speaker turns and overlapped speech, improving BLEU and WER performance

Ph.D. Student in Automatic Speech Recognition

Idiap & EPFL

📅 January 2020 – Ongoing

📍 Martigny, Switzerland

- Implemented innovative semi-supervised techniques for ASR in air-traffic control (low resource and challenging task)
- Implemented streaming ASR systems and collaboration with industrial partners

Computer Vision Intern

École nationale supérieure de mécanique et des microtechniques

📅 Jan 2019 – Nov 2019

📍 Besançon, France

- AI-based system for breast cancer diagnosis with IR images
- Early research in multi-modal techniques (vision & signal) for breast cancer diagnosis. 2 publications in highly ranked journals
- Master Thesis: Breast Cancer Diagnosis Using Machine Learning

PUBLICATIONS

Shortlisted Conference Proceedings (out of 22). h-index: 11.

👥 Conference Proceedings

- *Mai, F., *Zuluaga-Gomez, Juan, Parcollet, T., & Motlicek, P. (2023). HyperConformer: Multi-head HyperMixer for Efficient Speech Recognition. In *Proc. Interspeech 2023*.
- Zuluaga-Gomez, Juan, Ahmed, S., Visockas, D., & Subakan, C. (2023). CommonAccent: Exploring Large Acoustic Pretrained Models for Accent Classification Based on Common Voice. In *Proc. Interspeech 2023 [Nominated as best student paper award]*.
- Zuluaga-Gomez, Juan et al. (2022a). BERTraffic: BERT-based Joint Speaker Role and Speaker Change Detection for Air Traffic Control Communications. In *IEEE SLT*.
- Zuluaga-Gomez, Juan et al. (2022b). How Does Pre-trained Wav2Vec 2.0 Perform on Domain Shifted ASR? An Extensive Benchmark on Air Traffic Control Communications. In *IEEE SLT*.

EDUCATION

Ph.D. in Computer Science

École Polytechnique Fédérale de Lausanne

📅 Jan 2020 – Ongoing

M.Sc. in Mechatronics Engineering

University of Oviedo & ENSMM

📅 Sept 2017 – Sept 2019

B.Sc. in Mechatronics Engineering

Universidad Autonoma del Caribe

📅 Jan 2011 – Dec 2015

STRENGTHS & SKILLS

Hard-working

Problem-Solving

Self-Management & Teamwork

Python

Pytorch

Kaldi

W&B

Git

ASR

NLP

HuggingFace

Speechbrain

LANGUAGES

Spanish

English

French

Native

Bilingual Proficiency

Limited Working Proficiency

MOST PROUD OF



Teamwork

proposing common ground where ideas from different fields can grow



Persistence

despite the challenge of low-resource ASR and ST, I showed that creativity always pays off

LIFE PHILOSOPHY

"Discovery consists of looking at the same thing as everyone else and thinking something different." Albert Szent-Györgyi

HOBBIES

🍳 Cooking

🧑‍🌾 Hiking

📖 Reading

🚌 Traveling

☕ Coffee Brewing