

JUAN PABLO ZULUAGA

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

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EXPERIENCE

Ph.D. Student in Automatic Speech Recognition

Idiap & EPFL

January 2020 – Ongoing

Martigny, Switzerland

- Automatic Speech Recognition for air traffic control: ATCO2 EU-H2020
- Implemented innovative semi-supervised techniques for ASR in air-traffic control (low resource and challenging task)
- Led the integration of NLP techniques. 50% improvement in entity recognition from ASR (breakthrough)
- Participated at INTERSPEECH and OpenSky Network Symposium 2020 and 2021 editions (4 Research Articles)
- Implemented a streaming ASR system for air traffic control communications: partnered with several industrial partners

Computer Vision Intern

École nationale supérieure de mécanique et des microtechniques

Jan 2019 – Nov 2019

Besançon, France

- Developed a system for breast cancer diagnosis with infrared images
- Early research in multi-modal techniques (vision & signal) for breast cancer diagnosis
- Published two papers in highly ranked Journals during the Internship
- Master Thesis: Breast Cancer Diagnosis Using Machine Learning

PUBLICATIONS

Shortlisted Journal and Conference Articles (out of 12). h-index: 5.

Journal Articles

- Zuluaga-Gomez, J. [Juan], & et al. (2021b). A cnn-based methodology for breast cancer diagnosis using thermal images. *Computer Methods in Biomechanics and Biomedical Engineering: Imaging & Visualization*, 9(2).
- Zuluaga-Gomez, J., & et al. (2019). A survey of breast cancer screening techniques: Thermography and electrical impedance tomography. *Journal of medical engineering & technology*, 43(5).

Conference Proceedings

- Kocour, M., Veselý, K., Blatt, A., Zuluaga-Gomez, J., & et al. (2021). Boosting of Contextual Information in ASR for Air-Traffic Call-Sign Recognition. In *Proc. interspeech 2021*.
- Zuluaga-Gomez, J. [Juan], & et al. (2021a). Contextual Semi-Supervised Learning: An Approach to Leverage Air-Surveillance and Untranscribed ATC Data in ASR Systems. In *Proc. interspeech 2021*.
- Zuluaga-Gomez, J. [Juan], & et al. (2020). Automatic call sign detection: Matching air surveillance data with air traffic spoken communications. In *Multidisciplinary digital publishing institute proceedings* (Vol. 59, p. 14).

LIFE PHILOSOPHY

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

MOST PROUD OF



Teamwork

proposing common ground where ideas from different areas can grow



Persistence

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

STRENGTHS & SKILLS

Hard-working

Problem-Solving

Self-Management & Teamwork

Python

Kaldi

Bash Scripting

ASR

NLP

CV

Colab & Jupyter

LANGUAGES

English

Spanish

French



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

HOBBIES

Cooking

Hiking

Reading

Traveling

Coffee Brewing