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: collaboration with 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 ournals during the internship
- Master Thesis: Breast Cancer Diagnosis Using Machine Learning

PUBLICATIONS

Shortlisted Journal and Conference Articles (out of 12). h-index: 6.

📄 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).

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   Kaldi   Bash Scripting   ASR   NLP   CV   Colab & Jupyter

LANGUAGES

Spanish — Native
English — Bilingual Proficiency
French — Limited Working Proficiency

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

LIFE PHILOSOPHY

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

HOBBIES

🏆 Cooking   🚶 Hiking   📖 Reading   🚌 Traveling   ☕ Coffee Brewing