

Agustín Conesa

 aconesac |  agustincc |  agusconesaceldran@gmail.com |  +34638267942

WORK EXPERIENCE

Technical Researcher - Universitat Pompeu Fabra (UPF)

Sep 2023 - present

Currently, I collaborate with the Neurosciences team led by Dr. Pablo Villoslada at the Hospital del Mar Research Institute (IMIM), where I play a role in the development of the the Hospital del Mar Research Institute (IMIM), where I play a role in the development of LIFUS development of LIFUS (Low-Intensity Focused Ultrasound) technology for neuromodulation and opening of the blood-brain barrier (BBB).

Data Analyst - Telenatura EBT

Sep 2022 - Sep 2023

Analysis, management and processing of data generated by an eNose device for non-invasive analysis of organic samples. Translational movement of research developed technology to the biomedical domain. Project coordinator in two projects carried out with external institutions: Project 1: Enose for Urinary infection detection. Point of Care Diagnosis of bacterial infections in urine by means of an electronic nose. Project 2: Enose for food Quality assesment. Application of electronic nose in pre-harvest analysis of food additives.

Technical Specialist - Universitat Miguel Hernández (UMH)

June 2021 - Sep 2022

Grant-based working experience in an University research project entitled: "Electronic devices for non-invasive analysis". Design and build prototypes of non-invasive analysis electronic devices namely: eNose, eTongue. Develop and implement statistical and ML algorithms for the analysis of data generated by eNose, and eTongue devices.

PROJECTS

Neuromodulation LIFUS device developement

Sep 2022 - now

Collaboration with an interdisciplinary group of scientists and medical researchers to design and optimize LIFUS devices that can enhance the treatment of various neurological conditions. We are also currently developing new methods based on Generative AI and reinforcement learning for planning LIFUS therapies.

Master's Thesis

Sep 2021 - Sep 2023

Developed a Generative Adversarial Network (GAN) framework to produce meta-simulations of ultrasound images from CT slices and mask inputs. The model generates realistic ultrasound outputs, enabling fast and efficient simulation for therapy planning. Applied deep learning techniques to optimize ultrasound imaging workflows, improving computational efficiency and reducing reliance on traditional simulation methods.

Bachelor's Thesis

Sep 2021 - Sep 2023

Developed an end-to-end therapy planning system for Low-Intensity Focused Ultrasound (LIFUS) neurostimulation of the spinal cord. Designed deep learning models to optimize stimulation planning, leveraging image segmentation and iterative prototyping and validation of hardware components.

EDUCATION

2023 - now	Master in Artificial Intelligence at Universitat Politècnica de Catalunya (UPC)	
	(8.26/10)	
2019 - 2023	Biomedical Engineering at Universitat Pompeu Fabra (UPF)	(8.4/10)
2017 - 2019	Research-oriented high school diploma at IES Juan Carlos I	(9.6/10)

PUBLICATIONS

- Celdrán, Agustín Conesa et al. (2022). “Low-cost electronic nose for wine variety identification through machine learning algorithms”. en. In: *Agronomy (Basel, Switzerland)* 12.11, p. 2627. ISSN: 2073-4395. DOI: [10.3390/agronomy12112627](https://doi.org/10.3390/agronomy12112627). URL: <https://www.mdpi.com/2073-4395/12/11/2627>.
- María, Eduardo González et al. (2023). “Classification of monofloral honeys by measuring a low-cost electronic nose prototype based on resistive metal oxide sensors”. en. In: *Agronomy (Basel, Switzerland)* 13.8, p. 2183. ISSN: 2073-4395. DOI: [10.3390/agronomy13082183](https://doi.org/10.3390/agronomy13082183). URL: <https://www.mdpi.com/2073-4395/13/8/2183>.
- Rica-Martinez, Alba de la et al. (2023). “Low-cost electronic nose for the determination of urinary infections”. en. In: *Sensors (Basel, Switzerland)* 24.1, p. 157. ISSN: 1424-8220. DOI: [10.3390/s24010157](https://doi.org/10.3390/s24010157). URL: <https://www.mdpi.com/1424-8220/24/1/157>.