Mario Chacón Falcón

LinkedIn | GitHub | Personal Website

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SKILLS

- **Programming Languages:** LaTeX, Haskell, Isabelle, Python, Matlab, ACL2, Otter, CLIPS.
- **Programming Frameworks:** NumPy, Pandas, sklearn, matplotlib, PyTorch.
- **Technologies:** Deep Learning, Computer Vision, Federated Learning, Spiking Neural Networks (SNNs), Ensemble Learning, Transformers.
- **Languages:** Spanish (native), English (C1/Certificate in Advanced English. Cambridge, grade B).

PROFESSIONAL EXPERIENCE

Research Fellow, CSIC, JAE Intro ICU research scholarship 01/02/24-Now

Microelectronics Institute of Sevilla (IMSE)

- **Project title**: Bio-inspired Vision Processing Systems with Deep Learning.
- **Modelling**: Develop and optimize Spiking Neural Networks architectures to classify spatio-temporal neuromorphic datasets using PyTorch.

TALKS AND CONFERENCES

- 10th European Congress of Methodology (EAM) at Ghent university, Belgium, July 2023.
- **Delayed SNNs on spatio-temporal neuromorphic datasets**: Poster presentation, AI-HUB's conexion summer school, Valencia, Spain, July 2024[1].
- **A new Federated Learning adaptation of AdaBoost**: Conference talk, AEMCO Congress, Sevilla, Spain, September 2024[2]

PROJECTS

- Developed a **new privacy preserving** algorithm for my Master's Thesis, using **ensemble based federated learning**, achieving evaluation metrics that compete with other state of the art models.
- Studied the **effect of synaptic delays on spiking neural networks** applied to spatio-temporal neuromorphic datasets, implementing a novel architecture that mixed convolutional layers and delays layers, achieving better performance than only delays layers.

EDUCATION

Secondary/high school education 2017-2019

Free State high school, USA, Kansas & IES Cornelio Balbo, Spain, Cadiz.

Mathematics Bachelors Degree 2019-2023

*Universidad de Sevilla (Avg Grade: **7.94/10**)*

Master's Degree in Logic, Computation and Artificial Intelligence 2023-2024

*Universidad de Sevilla (Avg. Grade: **9.6/10**)*

[1] https://mariochf.github.io/talks/DSNN-Poster

[2] https://mariochf.github.io/talks/AEMCOCongress