

Ezequiel T. Centofanti

AI RESEARCH ENGINEER · DATA SCIENTIST

Paris, France

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Summary

PhD Candidate specialised in AI for Astrophysics with a strong background in Machine Learning, Deep Learning, and Signal Processing. Experienced in developing novel algorithms for inverse problems and processing complex scientific data. Proficient in Python (PyTorch, TensorFlow, JAX) and High-Performance Computing (HPC), with a proven ability to bridge the gap between theoretical research and scalable solutions.

Education

CEA & Université Paris Cité

Paris, France

PHD IN MACHINE LEARNING & AI FOR ASTRONOMICAL IMAGING

2023 - Present

- Advisors: Dr. Samuel Farrens & Dr. Jean-Luc Starck.
- Research Focus: Developing AI methods for optical and radio astronomical imaging.

IMT Atlantique (Co-accredited with Univ. Rennes 1 & CentraleSupélec)

Brest, France

MASTER (M2) IN SIGNAL AND IMAGE PROCESSING (SISEA)

2022

- Specialization in systems, automation, and advanced signal processing.

IMT Atlantique

Brest, France

MATHEMATICAL AND COMPUTATIONAL ENGINEERING DEGREE

2022

- M2 focus: Deep Learning, Computer Vision, Optimization, and Numerical Methods.
- M1 focus: Embedded Systems, FPGA programming, and Circuit Design.

University of Buenos Aires

Buenos Aires, Argentina

ELECTRICAL ENGINEERING DEGREE

2019

- Focus on Analog/Digital Electronics, Signal Processing, and Control Systems.

Technical Skills

Machine Learning	Deep Learning, Signal Processing, Inverse Problems (Deep Unrolling), Optimization, Generative Models
Languages & Frameworks	Python (PyTorch, TensorFlow, Scikit-Learn, NumPy, Matplotlib), JAX, C/C++, AI Coding Agents
Statistical Methods	Probabilistic programming languages (numpyro, blackjax), Bayesian inference (emcee, MCMC, HMC)
Tools & Platforms	Git, High-Performance Computing (HPC), Linux/Unix, LaTeX
Languages	English (Fluent), French (Fluent), Spanish (Native), Italian (Intermediate)

Experience

Polytech Paris-Saclay

Paris, France

ASSISTANT PROFESSOR (DIGITAL & ANALOG ELECTRONICS)

2024 - 2025

- Teaching practical lab sessions on digital and analogue electronics to engineering students.

Inria (OPIS Group)

Saclay, France

AI RESEARCH ENGINEER

2022 - 2023

- Designed and implemented novel **Deep Unfolding algorithms** for solving complex inverse problems in imaging.
- Optimized deep learning models using **PyTorch** on High-Performance Computing (**HPC**) clusters to ensure scalability.
- Contributed to reproducible research by publishing open-source code repositories.

CosmoStat, CEA

Saclay, France

RESEARCH INTERN (M2) - DATA SCIENCE & ASTROPHYSICS

2022

- Point Spread Function (PSF) estimation model using **TensorFlow** for the European Space Agency's **Euclid mission**.

Thales Group & IMT Atlantique

Brest, France

ENGINEERING INTERN (M1)

2021

- Developed algorithms for Unmanned Aerial Vehicle (UAV) detection and classification based on micro-Doppler signatures.
- Utilized **Matlab** and **Python** for signal analysis and feature extraction.

University of Buenos Aires

Buenos Aires, Argentina

PHYSICS ASSISTANT PROFESSOR

2019 - 2020

- Taught elementary physics concepts to a group of 80+ students, managing 10 hours of instruction per week.

Honors & Awards

2023	Distinguished Student , University of Buenos Aires	Argentina
2021	Academic Distinction , International Double Degree Program	France/Argentina
2020	EIFFEL Excellence Scholarship , Awarded by the French Ministry of Foreign Affairs	France