

# JESÚS DE LA FUENTE CEDENO

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## EXPERIENCE

### SonyAI

Research Scientist Intern

Sep 2024 - March 2025

Barcelona

- Working with LLMs on hypotheses generation for knowledge graphs and link prediction challenges.

### Center for Data Science, New York University

Fulbright Fellowship Ph.D. Researcher

Sep 2022 - Sep 2023

New York

- Worked on train-test distribution shift adaptive autoencoders to perform deconvolution on RNA-seq expression matrices. *Advisor:* Carlos Fernandez-Granda (Ph.D. Stanford '14).

### DeepFi Ltd. (Startup)

Research Scientist Intern

May 2022 - Oct 2022

Remote

- Leveraged mathematical concepts behind *DeFi* liquidity pools, contributing to build a backtesting framework for simulating liquidity provision strategies on *Uniswap v3* pools.

## EDUCATION

### Electrical Eng. Department, UNAV & Center for Data Science, New York University

Ph.D. candidate in Machine Learning applied to Computational Biology

Sep 2020 - Current

Spain & New York

*Research Topics:* Graph Learning, Bayesian Inference, Manifold learning, Interpretable AI.

*Advisors:* Idoia Ochoa (Ph.D. Stanford '16) and Mikel Hernaez (Post-doc Stanford '16).

### TECNUN School of Engineering, University of Navarra

B.S. & M.Eng: Electrical Engineering

Sep 2014 - 2020

Spain

*Master Thesis:* Improved Gene Regulatory Network inference via graph cliques and clustering.

*Bachelor Thesis:* Integration of OPC UA protocol into Unity development platform using C#.

## ML PROJECTS LED

### Interpretable Causal Representation Learning for Biological Data in the Pathway Space

2024

Interpretable framework with theoretical guarantees

- Accepted as a poster at [AIDrugX](#), [NeurIPS 2024](#). Accepted at [ICLR 2025](#).

### Sweetwater: An interpretable and adaptive autoencoder for efficient tissue deconvolution

2023

Autoencoder for train-test distribution shift minimization

- Accepted as a poster in [MLCB 2023](#). *Under review* at [Nucleic Acid Research](#). ([arXiv](#)).

### Towards a more inductive world for drug repurposing approaches

2022

Inductive and transductive node embedding analysis on bipartite graphs

- Oral presentation ( $\frac{6}{76}$ ) in [AI4D3](#), [NeurIPS 2023](#). Accepted in [Nature Machine Intelligence](#). ([arXiv](#)).

### Bayesian machine learning enables transcriptional rewiring

2021

Bayesian inference model with sparsity constraints

- Selected for a long talk ( $\frac{10}{43}$ ) in [ISMB/ECCB 2021](#). Published in [Cancer Research](#).

## SKILLS

### Languages

Python, R, Linux/Bash, LaTeX, Solidity.

### Libraries

PyTorch, SciPy, Numpy, Seaborn, Scikit-learn.

### Technologies

Docker, Poetry, Slurm, Hydra, Git, AWS.

### Software

[SENA-VAE](#), [GraphGuest](#), [Sweetwater](#), [TraRe](#).

### Machine Learning

LLMs, Graph Neural Networks, Generative models, Autoencoders, Knowledge Graphs, Linear/Logistic Regression, SVM, PCA, Ensemble Learning.

### Personal

Highly self-disciplined, detail and result-oriented. Creative and self-starter. Able to work on multiple projects simultaneously, with multidisciplinary teams.

## HONORS AND AWARDS

- Kaggle Competitions Expert.** Ranking 1,581 out of 204,302 competitors. user: [jdlfuentec](#). 2024
- Ph.D. Fulbright Fellowship**, 1 year at New York University. **Amount: 41,180 \$** Sep 2022
- Navarra's Government Fellowship, 2 years Ph.D. Funding. **Amount: 68,718 €** Sep 2021-2023
- Erasmus+ Scholarship, student mobility for Internships, 4 months. **Amount: 2,000 €** Aug 2018