Jesús de la Fuente Cedeño

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Experience

SonyAI Sep 2024 - March 2025
Research Scientist Intern Barcelona

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

Center for Data Science, New York University Sep 2022 - Sep 2023
Fulbright Fellowship Ph.D. Researcher 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) May 2022 - Oct 2022
Research Scientist Intern 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 Sep 2020 - Current
Ph.D. candidate in Machine Learning applied to Computational Biology Spain

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 Sep 2014 - 2020
B.S. & M.Eng: Electrical Engineering 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**. *Under review* at **ICLR 2025**.

Sweetwater: An interpretable and adaptive autoencoder for efficient tissue deconvolution 2023
Autoencoder for train-test distribution shift minimization

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

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

1. **Kaggle Competitions Expert**. Ranking 3,139 out of 205,626 competitors. user: *jdlfuentec*. 2024
2. **Ph.D. Fulbright Fellowship**, 1 year at New York University. **Amount: 41,180 $** Sep 2022
3. Navarra's Government Fellowship, 2 years Ph.D. Funding. **Amount: 68,718 €** Sep 2021-2023
4. Erasmus+ Scholarship, student mobility for Internships, 4 months. **Amount: 2,000 €** Aug 2018