Adrian **Valente**

ML Research Scientist & Engineer, PhD

About me

Engineer and scientist, I combine a research mindset with rigorous software/ML engineering practice. I have worked on ML applied to biology for 6 years in academia and industry but am open to other fields of application.

Skills

Python ●●●●●
shell ●●●●○
R ●●●○○
C++ ●●○○○
Java ●●○○○
C# ●●○○○

pytorch ●●●●●
pandas ●●●●●
JAX/flax ●●●●○
HF ●●●●○
git ●●●●●
SQL ●●●○○

Human Languages

French (Native)
Spanish (Native)
English (Fluent, TOEFL 108)

Personal Information

Citizenship: French
Residence: Paris
Born 1995
Driving License

Teaching

Explainable AI (PSL, 2023)
Statistics (SciencesPo, 2021-23)
Python & DS (ENS, 2019-22)

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adrian-valente

Experience

Since 05/2024 — **Research Engineer**
INSTADEEP · Paris, FR
LLMs for mRNA technology. Developed new generative models, evaluation suites, and contributed to customer projects (fine-tuning).
Technologies: jax, pytorch, huggingface, GCP (& TPUs)

06/2023-05/2024 — **Research Scientist**
ERVIMMUNE · Lyon, FR
ML models to identify targets for novel cancer vaccines, using proteomic and transcriptomic data ; set-up of a dedicated HPC cluster for the company;
Technologies: python, pytorch, slurm, snakemake, (sc)RNA-seq

2022–2023 — **Postdoc**
2019–2022 — **PhD Student**
ECOLE NORMALE SUPERIEURE · Paris, FR
Deep learning applied to neuroscience, with emphasis on interpretability. Published 4 papers (3 as first, 300+ citations), 8 abstracts, 2 open-source projects, 8 technical blog posts. Teached several classes and supervised interns and early PhD students.
Technologies: python, pytorch, slurm, electrophysiology.

08/2018–02/2019 — **Software Engineering Intern**
MICROSOFT · Paris, FR
Development and deployment of back-end software and anomaly detection algorithms for the Universal Store.
Technologies: C#, Scope (U-SQL), Azure.

Education

2019–2023 — **ENS Paris**
PhD, Computational Neuroscience

2017–2019 — **EPFL**
Master in Computer Science
2nd best GPA

2014–2017 — **Ecole Polytechnique**
Engineering Diploma,
Applied maths & CS

2012-2014 — **Classes prepa**
Lycee Stanislas.
Undergrad studies in maths & physics

Selected projects

- hippoLLM: hybrid graph-vector storage system for LLMs (python, langchain). [Code][Abstract]
- Low-rank RNNs for neuroscience (python, pytorch). [Code] [Blog]
- Technical blog on ML & statistics, e.g. the new wave of RNNs. [Link]
- Labs on explainable AI for master classes [Github]

Publications

2022 Valente A., Pillow J., Ostojic S., "Extracting computational mechanisms from neural data using low-rank RNNs", *NeurIPS 2022*, link.

2022 Dubreuil* A., Valente* A., Beiran M., Mastrogiuseppe F., Ostojic S., "The role of population structure in computations through neural dynamics", *Nature Neuroscience*, 25, p. 783-794, link.

2022 Valente A., Ostojic S., Pillow J., "Probing the Relationship Between Latent Linear Dynamical Systems and Low-Rank Recurrent Neural Network Models", *Neural Computation*, 34(9), p. 1871-1892, link.

2021 Beiran M., Dubreuil A., Valente A., Mastrogiuseppe F., Ostojic S., "Shaping dynamics with multiple populations in low-rank recurrent networks", *Neural Computation*, 33(6), p. 1572-1615, link.