

Valentin Jacquin

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ML/AI × BIOLOGY | Computational neuroscience and applied ML on biomedical data, with self taught infrastructure work toward automated research systems.

EDUCATION

M.Sc. Cognitive Science (Cog-SUP), Neuroscience and AI Track

Sorbonne Université & Université Paris Cité, Paris, France (2024-2026)

Graduated with highest honors. Machine learning, computational neuroscience, cognitive science, ethics of AI

Double B.Sc. Computer Science / Biology

UVSQ Paris-Saclay, Versailles, France (2021-2024)

Graduated with high honors. Algorithmics, molecular interactions and genomics

WORK & RESEARCH EXPERIENCE

ENS Paris, Group of Neural Theory, Paris, France

Master Thesis, Computational Neuroscience (Oct 2025 – June 2026)

- Developed a Python framework from scratch to model neural population firing dynamics using EDO
- Built a custom fitting algorithm to fit the model to real biological recordings; core challenge was finding parameters producing a bistable network matching the data in both high and low firing-rate states

VITAM / CERVO Research Centre, Université

Laval, Quebec City, Canada (remote, based in Paris)

Research Collaborator, Contract (Sept 2025 – Present)

- Prototyped a speech-to-image pipeline for schizophrenia research, using self-hosted Whisper, transcript segmentation, and a multimodal model to link segments to images, feeding the lab's existing analysis framework.
- Benchmarked multiples architecture on 1000 audio files
- Responsible for the hosting side of the experiments: run every model myself on my own AMD/ROCm GPU workstation with PyTorch
- Host a small web server giving the team direct access to the transcription results, speeding up a step that had been done entirely by hand until then

IFC (World Bank Group), Washington, D.C. (remote, based in Paris)

Data Engineering Contractor (June – July 2025)

- Built a fault-tolerant integration tool across 4 different APIs, handling format mismatches and data exceptions to compile cross-country crop data for the World Bank

Institut Pasteur, Institut de l'Audition, Paris, France

Research Intern (M1), Auditory Neuroscience (March 2025 – June 2025)

- Built a transformer-based model to predict music sequences, replacing the lab's previous RNN approach, with measured improvement over that baseline
- Extracted prediction error as a proxy metric for musical surprise and used it in a GLM to test the link between neural excitation and surprise in music

SKILLS & EXPERTISE

Languages & ML. Python, PyTorch, vLLM, SQL, Claude Code

Scientific practice. Hypothesis-driven experimental design; model fitting and validation against experimental data; literature review; scientific writing; wet-lab work (gel electrophoresis, protein isolation and binding assays, fungal culture)

Infrastructure. Linux / WSL; ROCm (AMD GPU); self-hosted model inference; web server hosting

Domain of knowledge. Computational and cognitive neuroscience; biology (molecular interactions, genomics); computer science (algorithmics, machine learning, data pipelines)

LANGUAGES

English

Fluent (C2)

French

Native Speaker

German

Limited working proficiency