

Postdoctoral/Engineer Research Fellow



The *Decision and Bayesian Computation (DBC)*, the *Perception and Memory (PM)* labs and the *Image Analysis Hub (IAH)* at the *Institut Pasteur* of Paris are seeking either a talented postdoctoral researcher or an engineer for a project at the frontier of neuroscience, modeling and computer vision.

The recruited researcher will work on an multi-laboratory project which aims to explore how a depressive-like state alters neuronal circuits in the olfactory system by implementing an innovative technological approach to quantify brain connectivity in 3D. She/He will be in charge of modeling and analyzing the light-sheet microscope images generated during the project. The project involves the Perception and Memory lab, the decision and Bayesian computation lab and the Imaging Analysis Hub.

The proposed 2-year position (that could be extended) will mainly consist of the following tasks:

- Development within a new framework mixing Virtual reality (<https://diva.pasteur.fr/>) tablet app (<https://www.napari-hub.org/plugins/hesperos>) and big data processing pipeline (<https://github.com/mastodon-sc/mastodon>) one shot learning procedure from minimal user input.
- Design a set of physics & geometry-informed self-supervised pretext tasks to improve segmentation learning.
- Develop within the Graph Neural Network (GNN) pipeline of the DBC lab a new approach to biological neural circuit characterization.

The candidate should have, or expect to have, a PhD degree or equivalent degree (Engineer) in a related field with prior research experience stated in the above. The successful candidate could be

- an applied mathematician willing to work at the frontier of neurosciences
- a physicist willing to work at the frontier of neurosciences
- a machine learning engineer
- a neuroscientist with coding knowledge

Required Skills:

- Coding in python

Nice to have skills:

- Experience in handling Big Data
- Prior Neuroscience knowledge

OTHER INFORMATION

The starting date should be no later than June 2023.

CONTACTS: To apply, please send your motivation letter, CV, core repository URLs, and recommendation letters (optional) to: Mariana Alonso malonso@pasteur.fr, Jean-Baptiste Masson jbmasson@pasteur.fr and Jean-Yves Tinevez jean-yves.tinevez@pasteur.fr

