

Postdoctoral or Research Engineer Position in image analysis applied to Spatial Transcriptomics

The École Normale Supérieure (ENS) of Lyon is currently seeking a highly talented postdoctoral researcher or research engineer specializing in image data analysis. The successful candidate will join the Spatial-Cell-ID initiative (<http://spatial-cell-id.ens-lyon.fr/>), contributing to the development of innovative pipelines for the analysis of MERFISH data. The primary focus of this position will encompass image realignment, RNA spot detection, 3D MERFISH decoding, and cell segmentation, with the overarching goal of unravelling the biology of single cells within their native tissue environments.

Spatial-Cell-ID is a new national spatial transcriptomics facility funded by the French “EquipEx+” excellence initiative and led by the École Normale Supérieure of Lyon (ENSL). Spatial-Cell-ID gathers teams with the goal of studying cellular identity and its spatial heterogeneity within tissues, organs, or biological systems in normal and pathological contexts, leveraging the latest advancements in spatial transcriptomics. Spatial transcriptomics technologies were designated “Method of the Year 2020” by the Nature Methods journal and are currently revolutionizing our ability to study complex biological systems. Spatial-Cell-ID offers equipment for spatial transcriptomics that integrates imaging, sequencing, and data analysis technologies, which in synergy will provide access to the transcriptome of any single cell within its native spatio-temporal environment. It hosts a comprehensive selection of technologies, including single-cell transcriptomics, untargeted spatial transcriptomics (e.g., Slide-seq), and targeted spatial transcriptomics (e.g., MERFISH), associating state-of-the-art technological platforms of the University of Lyon.

Role: The appointed candidate will develop innovative pipelines for the analysis of MERFISH data. The recruited post-doc or research engineer will be working at the **IGFL** (ENS of Lyon) in the **Enriquez team** and will closely collaborate with the Spatial-Cell-ID community composed of biologists, microscopists, biophysicists, and computer scientists who will assist him/her in the different aspects of this highly interdisciplinary project. The candidate will be involved in one or both of the main projects related to the development of 3D MERFISH: 1. Discover the gene networks controlling neuronal and muscle identity in *Drosophila*, 2. Generate a single cell smFISH atlas of the *Drosophila* Embryo in 3D at the cellular level. The candidate will also be involved in the development of 3D MERFISH for other model organisms relevant to the Spatial-Cell-ID community.

Profile:

- Ph.D. or equivalent experience in Biology, Physics or Mathematics is required.
- Proficiency in programming languages, particularly Python, applied to image data analysis.
- Experience in deep learning for image analysis/computer vision is a plus.
- Experience in confocal and super-resolution imaging is a plus.
- Excellent communication and collaboration skills. English is the working language.

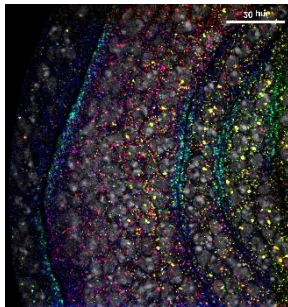
Desired starting date : February 2024 (flexible date)

Contract duration : 2 years with a possibility of extension

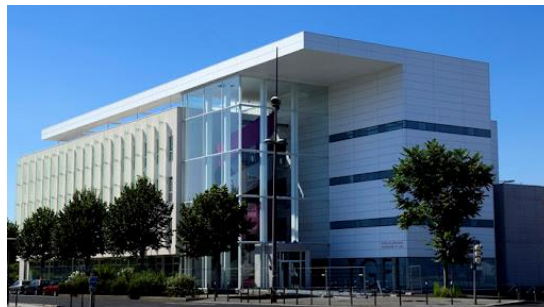
Salary : Remuneration based on experience (from 2000€/ to 3000€/month)

The employer : The **École Normale Supérieure de Lyon** is an elite French public higher education institution that trains professors, researchers, senior civil servants as well as business and political leaders. It is a symbol of French Republican meritocracy and it remains committed to disseminating knowledge to the widest audience and to promoting equal opportunity. The ENSL brings together several laboratories at the cutting edge of science and working on different fields of Biology, Mathematics, Physics and Humanities.

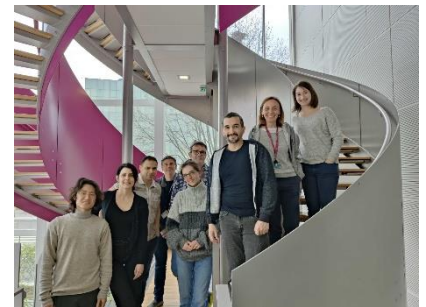
Instructions for applicants : Applications should include a CV, a cover letter, and contact details for 3 referees to be sent to: Jonathan Enriquez (jonathan.enriquez@ens-lyon.fr) & Nicolas Ducros (Nicolas.Ducros@insa-lyon.fr). **Please use the email subject "Spatial-Cell-ID"**. For further information please contact the same addresses. Applications will be considered upon submission.



MERFISH



IGFL



**MERFISH
working group team**