Bioimage Analyst in Human Neuropathology

Position: Postdoc 80-100%
Location: Medical University Center, University of Geneva, Geneva, Switzerland
Starting date: 01/02/2024 or soon after

The Lamylab (https://www.unige.ch/medecine/Lamylab/en/) at University of Geneva is seeking a talented and driven postdoc to join an international collaborative project (Archimed) as a **Bioimage Analyst**.

The ArchiMed project ("Mining medical archives and pathological collections in the digital age") aims at transforming historical human histopathological tissue collections in modern, digitally operated research biobanks. The successful candidate will develop AI-based image processing tools to perform automated histopathological analysis of microscopic images. The first indication will be in neuropathology, but will also extend to other tissue types. The candidate will work closely with the Geneva Brain Bank and a multidisciplinary team comprising clinicians, pathologists, historians, molecular biologists, bioinformaticians, and statisticians based in Geneva and Strasbourg.

Key responsibilities
- Biological image processing and analysis on large microscopic datasets using different software packages including Python, ImageJ, R, MatLab;
- Develop image processing software, workflows and infrastructure using state of the art computer vision and machine learning approaches, including deep learning algorithms;
- Work with Lamy lab and Archimed project scientists, clinicians, IT specialists and collaborators to design and implement novel approaches of digital pathology of nervous system disorders and integrate image analysis with bioinformatics and medical information workflows;
- Establish a biomedical image database interoperable with the workflows of other project partners;
- Effectively communicate research results to a wide range of researchers from computer science to life sciences;
- Supervise junior scientists working on image analysis;
- Contribute to grant applications and other development activities;
- Identify and effectively collaborate with biologists and other software engineers in data visualization, and data interpretation;
- Survey existing literature and track emerging trends in image and data processing and development, prepare reports for projects and effectively communicate results.

Required competences and experience
- PhD in computer science, computer vision, bioinformatics, biophysics, biology, neurobiology or a related discipline;
- Excellent programming skills in Python, ImageJ, R, MatLab;
- Demonstrated advanced knowledge of image processing and data analysis techniques and software packages;
- Demonstrated advanced knowledge in Artificial Intelligence approaches especially Machine/ Deep learning algorithms;
- Advanced knowledge of software project management;

- Experience in setting-up a hardware infrastructure for large scale image processing;
- Knowledge and familiarity with microscopy and bioimaging modalities, image formats, image management systems and visualization tools ;
- Strong understanding of biology and the nervous system at various scales is a plus;
- Proven track record in working in collaborative and interdisciplinary projects;
- Problem solving oriented mind;
- Excellent communication skills with the ability to integrate and work well within a multicultural and multidisciplinary team environment
- Ability to effectively communicate research results to a wide range of researchers from computer science to life sciences;
- Fluent in English (both verbal and written)

The position is funded by the Swiss National Science Foundation for up to 3 years in the first instance.

To apply, please send your CV and a covering letter describing your qualifications and your motivations to Christophe.lamy@unige.ch. The position is opened until filled.

Keywords: image processing, AI, neuropathology, microscopy, biobank