

Image Analyst / Python programmer

Reports to: Johannes Kohl, Group Leader

This is a full-time, fixed term (12 months) position on Crick terms and conditions of employment.

Project summary

The successful candidate will develop open-source tools in Python for the registration of 2D histological imaging data into a 3D reference space, and subsequent analysis and visualisation of detected features (e.g. cells) in these images. The goal will be to build a flexible module with a graphical user interface to allow use by neuroscience researchers.

The final tools will be fully compatible with an existing suite of tools for cell detection, registration and analysis (cellfinder, <https://cellfinder.info>). The modules resulting from this project would be publishable both as a standalone paper as well as part of a larger project.

This project will be supervised by Dr Johannes Kohl (Francis Crick Institute) in close collaboration with Dr Adam Tyson (Sainsbury Wellcome Centre). In addition, the position holder will work closely with the Software Engineering team within the Crick's Scientific Computing department. This position will be for 12 months (with a flexible work schedule) and is suitable for remote work. Shortlisted candidates may be asked to describe, or provide a link to, previous software projects.

Key responsibilities

These include but are not limited to:

- Lead the core development of an image registration pipeline
- Integrate newly developed modules with existing frameworks
- Liaise and coordinate between bioinformaticians and bench scientists involved in this project
- Produce thorough and concise documentation for these tools
- Present results at regular group and international meetings
- Develop this project 'in the open', and in a highly collaborative manner

Key experience and competencies

Essential

- Excellent programming skills in Python
- Experience with version control (e.g. git)
- Image processing experience (ideally fluorescence microscopy)

Desirable

- MATLAB experience
- Experience with image registration

- Experience with 3D image analysis and visualisation and/or building graphical user interfaces
- Experience of programming in a scientific research setting
- Experience with open-source software development and software development best practices (testing, continuous integration etc.)
- Experience developing computationally efficient Python code (multiprocessing, Cython, numba etc.)
- Knowledge of existing open-source tools for bioimage analysis (ImageJ, QuPath, cellprofiler etc.)