



Offer #2024-07869

Data analysis for microscopy experiments with ring-shape “mother machine” microfluidic chips

Contract type : Fixed-term contract

Level of qualifications required : Graduate degree or equivalent

Fonction : Temporary scientific engineer

Level of experience : Up to 3 years

About the research centre or Inria department

The Inria Saclay-Île-de-France Research Centre was established in 2008. It has developed as part of the Saclay site in partnership with **Paris-Saclay University** and with the **Institut Polytechnique de Paris**.

The centre has [39 project teams](#), 27 of which operate jointly with Paris-Saclay University and the Institut Polytechnique de Paris; Its activities occupy over 600 people, scientists and research and innovation support staff, including 44 different nationalities.

Context

Inria is the French national institute for research in computer science, control, and applied mathematics promoting scientific excellence and technology transfer. The research topics of our group are at the intersection of mathematical biology, statistics, control engineering, and statistical physics applied to problems in biology.

Assignment

The objective of this project is to build and train a neural network for image analysis of single-cell microscopy experiments with E. Coli bacteria. Bacteria will be growing on novel microfluidic chips developed by our collaborator Remy Chait at the University of Exeter (UK). These chips are similar to classical “mother machine” microfluidic devices but contain a ring-structure in side channels as opposed to the dead-end channels of the mother machine.

Main activities

The different geometry of the chips implies that existing image analysis tools, such as DeLTA, that allow one to segment cells in images and to track cells over multiple images in time do not work out of the box. The task of this project is to possibly modify and certainly retrain the model used in DeLTA so as to obtain a functional tool for image analysis for the microscopy experiments of our collaborator.

Skills

- Strong programming skills.
- Prior experience with image analysis for single-cell microscopy experiments with “mother machine” microfluidic devices is required.

Benefits package

- Subsidized meals
- Partial reimbursement of public transport costs
- Leave: 7 weeks of annual leave + 10 extra days off due to RTT (statutory reduction in working hours) + possibility of exceptional leave (sick children, moving home, etc.)
- Possibility of teleworking (after 6 months of employment) and flexible organization of working hours
- Professional equipment available (videoconferencing, loan of computer equipment, etc.)
- Social, cultural and sports events and activities
- Access to vocational training
- Social security coverage

Remuneration

Salary in regards to professional experience

General Information

- **Theme/Domain** : Modeling and Control for Life Sciences
Biologie et santé, Sciences de la vie et de la terre (BAP A)
- **Town/city** : Palaiseau
- **Inria Center** : [Centre Inria de Saclay](#)
- **Starting date** : 2024-10-01
- **Duration of contract** : 12 months
- **Deadline to apply** : 2024-09-30

Contacts

- **Inria Team** : [LIFEWARE](#)
- **Recruiter** :
Ruess Jakob / jakob.ruess@inria.fr

About Inria

Inria is the French national research institute dedicated to digital science and technology. It employs 2,600 people. Its 200 agile project teams, generally run jointly with academic partners, include more than 3,500 scientists and engineers working to meet the challenges of digital technology, often at the interface with other disciplines. The Institute also employs numerous talents in over forty different professions. 900 research support staff contribute to the preparation and development of scientific and entrepreneurial projects that have a worldwide impact.

The keys to success

Applications should include a CV, list of publications, and contact details of scientists willing to recommend the candidate.

Warning : you must enter your e-mail address in order to save your application to Inria. Applications must be submitted online on the Inria website. Processing of applications sent from other channels is not guaranteed.

Instruction to apply

Defence Security :

This position is likely to be situated in a restricted area (ZRR), as defined in Decree No. 2011-1425 relating to the protection of national scientific and technical potential (PPST). Authorisation to enter an area is granted by the director of the unit, following a favourable Ministerial decision, as defined in the decree of 3 July 2012 relating to the PPST. An unfavourable Ministerial decision in respect of a position situated in a ZRR would result in the cancellation of the appointment.

Recruitment Policy :

As part of its diversity policy, all Inria positions are accessible to people with disabilities.