Doc02434 - PhD - Experimental and computational analysis of bacterial self-replicators

Level of qualifications required: Graduate degree or equivalent
Function: PhD Position

About the research centre or Inria department

Grenoble Rhône-Alpes Research Center groups together a few less than 800 people in 35 research teams and 9 research support departments.

Staff is localized on 5 campuses in Grenoble and Lyon, in close collaboration with labs, research and higher education institutions in Grenoble and Lyon, but also with the economic players in these areas.

Present in the fields of software, high-performance computing, Internet of things, image and data, but also simulation in oceanography and biology, it participates at the best level of international scientific achievements and collaborations in both Europe and the rest of the world.

Context

The open position concerns the IBIS group, which joins researchers from Inria Grenoble – Rhône-Alpes and the Laboratoire Interdisciplinaire de Physique at Université Grenoble Alpes (CNRS UMR 5588).

The first aim of the IBIS project-team is the unravelling of the adaptive strategies of bacteria through a systems-biology approach, making use of both models and experiments.

In particular, we will focus on the enterobacterium Escherichia coli, for which enormous amounts of genomic, genetic, biochemical and physiological data have been accumulated over the past decades.

A better understanding of the adaptive capabilities of E. coli in a variety of situations is a necessary prerequisite for interfering with these strategies by specific perturbations or by even rewiring the underlying regulatory networks.

This is the second and most ambitious aim of the research programme, which does not only spawn fundamental research on the control of living matter, but which may ultimately acquire practical relevance since E. coli serves as a model for many pathogenic bacteria and is widely used in biotechnology.

Assignment

Experimental and computational analysis of bacterial self-replicators

Skills

Applicants may come from different disciplinary backgrounds - physics, biology, computer science, or mathematics.

We expect them to be strongly motivated by interdisciplinary work combining experimental work in the lab with the mathematical modeling of biological systems and data analysis.

Basic knowledge in microbiology and previous experience with some of the techniques mentioned above would be appreciated.

Good relational skills are important for the project, as it will be carried out in an interdisciplinary and international environment.
Benefits package

Restaurant on site
Financial participation for public transport
Social security
Social and sporting activities
Arranging working time
French courses

General Information

- **Theme/Domain**: Optimization, Learning and Statistical Methods
- **Town/city**: Grenoble (Montbonnot)
- **Inria Center**: CRI Grenoble - Rhône-Alpes
- **Starting date**: 2018-09-01
- **Duration of contract**: 3 years
- **Deadline to apply**: 2018-06-30

Contacts

- **Inria Team**: IBIS
- **Recruiter**: De Jong Hidde / hidde.de-jong@inria.fr

About Inria

Inria, the French National Institute for computer science and applied mathematics, promotes "scientific excellence for technology transfer and society". Graduates from the world's top universities, Inria's 2,700 employees rise to the challenges of digital sciences. With its open, agile model, Inria is able to explore original approaches with its partners in industry and academia and provide an efficient response to the multidisciplinary and application challenges of the digital transformation. Inria is the source of many innovations that add value and create jobs.

Conditions for application

**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.

**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.