
Level of qualifications required: PhD or equivalent
Function: Post-Doctoral Research Visit

About the research centre or Inria department
The Inria Sophia Antipolis - Méditerranée center counts 37 research teams and 9 support departments. The center's staff (about 600 people including 400 Inria employees) is composed of scientists of different nationalities (250 foreigners of 50 nationalities), engineers, technicians and administrators. 1/3 of the staff are civil servants, the others are contractual. The majority of the research teams at the center are located in Sophia Antipolis and Nice in the Alpes-Maritimes. Six teams are based in Montpellier and a team is hosted by the computer science department of the University of Bologna in Italy. The Center is a member of the University and Institution Community (ComUE) "Université Côte d'Azur (UCA)".

Context
Within the framework of a partnership (you can choose between)

- not applicable

A causal-consistent reversible debugger for Erlang

Is regular travel foreseen for this post? No (but it may include some travel)

Assignment
Assignments:
With the help of Dr. Ivan Lanese, the recruited person will work in the setting of reversible computation for the Erlang language, with reversible debugging as main application area. The position will involve both theoretical work related to the study of reversibility, and practical work related to the implementation of a causal-consistent reversible debugger for Erlang. The work aims at improving and extending the debugger CauDEr:

https://github.com/mistupv/cauder

For a better knowledge of the proposed research subject:
Foundations of causal-consistent reversibility:

Vincent Danos, Jean Krivine:

Survey on causal-consistent reversibility:

Ivan Lanese, Claudio Antares Mezzina, Francesco Tiezzi:

Foundations of causal-consistent debugging:

Elena Giachino, Ivan Lanese, Claudio Antares Mezzina:
Causal-Consistent Reversible Debugging. FASE 2014: 370-384

Foundations of reversibility for Erlang:

Naoki Nishida, Adrián Palacios, Germán Vidal:
A Reversible Semantics for Erlang. LOPSTR 2016: 259-274

Collaboration:
The recruited person will be also in connection with Prof. German Vidal, from Universitat Politecnica de Valencia (Spain) and his group, which is also participating to the research.

Main activities
Main activities (5 maximum):

General Information
- Theme/Domain: Distributed programming and Software engineering
- Town/city: Bologna
- Inria Center: CRI Sophia Antipolis - Méditerranéee
- Starting date: 11/1/18
- Duration of contract: 1 year, 4 months
- Deadline to apply: 3/25/18

Contacts
- Inria Team: FOCUS
- Recruiter: Lanese Ivan / ivan.lanese@inria.fr

The keys to success
The work requires both theoretical skills in the areas of operational semantics and programming languages and practical programming skills. Experience in programming using the Erlang language is very relevant.

Conditions for application
Application file: Applications must be submitted online on the Inria website. Collecting applications by other channels is not guaranteed.

Before to apply, and preferably before March 20, it is strongly recommended to contact the scientific in charge of this offer.

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.
Study reversible computation in the setting of the programming language Erlang
Develop a prototype of a causal-consistent reversible debugger of Erlang
Additional activities (3 maximum):
Write papers/reports/documentation of the performed work

Skills
Technical skills and level required: Operational semantics and programming language: good
Languages: English
Relational skills: Team work

Benefits package
- Social security
- Paid leave
- Flexible working hours
- Sports facilities

Remuneration
Gross Salary: 2650 brutto per month