

2017-00011 - Formal methods and verification of hardware circuits

Contract type : Public service fixed-term contract

Renewable contract : Oui

Level of qualifications required : Graduate degree or equivalent

Other valued qualifications : MSc or PhD in computer science

Fonction : Temporary scientific engineer

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.

About the research centre or Inria department

The Inria research center of Grenoble - Rhône Alpes gathers nearly 730 workers organized in 34 research teams and 9 services that support research

Context

The proposed job is part of the French research project Securiot-2 that aims at developing novel methods to enable the design and certification of circuits for the Internet of Things.

The objective is to improve the CADP verification toolbox (<http://cadp.inria.fr>) developed by the CONVECS team and to apply this toolbox to verify whether a circuit is robust with respect to faults.

Assignment

Assignments :

With the help of researchers from the CONVECS team, the recruited person will be taken to develop various improvements of the CADP tools, as well as specify and analyze hardware circuits formally.

For a better knowledge of the proposed research subject :

Scientific references are available at the following URL, do not hesitate to log in: <http://convecs.inria.fr>

Collaboration :

The recruited person will work with the researchers of the CONVECS team and also with the partners of the Securiot-2 project, in particular the Tiempo company.

Main activities

The planned activities will consist, on the one hand, in participating to the formal description of the examples of circuits under scrutiny, in modelling various faults (either transient or permanent) at the logical-gate level, and to study the impact of such faults on the circuit behaviour, and, on the other hand, in contributing to enhancements of the CADP software tools according to the needs that will arise during the project.

Skills

Knowledge about formal methods, and/or skills in C-language programming, and/or competences in

General Information

- **Theme/Domain :** Proofs and Verification Software engineering (BAP E)
- **Town/city :** Montbonnot
- **Inria Center :** CRI Grenoble - Rhône-Alpes
- **Starting date :** 12/1/17
- **Duration of contract :** 12 months
- **Deadline to apply :** 10/31/17

Contacts

- **Inria Team :** CONVECS
- **Recruiter :**
Mateescu Radu / radu.mateescu@inria.fr

The keys to success

The expected skills are proficiency in software programming and intellectual rigour in verification and testing activities.

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.

hardware circuit design would be an asset.

Languages : English proficiency is desirable

Relational skills : team player, autonomy

Benefits package

- Subsidised catering service
- Partially-reimbursed public transport
- Social security
- Paid leave
- Flexible working hours
- Sports facilities

Remuneration

Gross annual salary to 30700 euros according to experience and diplomas