2018-00714 - Research Engineer in Optimizing Compilers

Context
The objective is to take responsibility for the technical management of the compilation framework Apollo, specifically dedicated to runtime speculative parallelization and optimization of programs.

Assignment
Assignments:
With the help of researchers involved in the Apollo project, the recruited person will be taken to extend and maintain the Apollo software framework, and will also serve as the principal interlocutor with the user community.

For a better knowledge of the proposed research subject:
The current release of Apollo, as well as technical presentations and scientific references are available at the following URL: http://apollo.gforge.inria.fr.

Collaboration:
The recruited person will be in connection with PhD and Master students who take part of Apollo’s extensions and improvements.

Responsibilities:
The person recruited is responsible for the software developments related to Apollo and will take initiatives for improvements and extensions.

Steering/Management:
The person recruited will be in charge of the technical management (extensions, improvements, publication of new releases, benchmarking), as well as some human management (user community, supervision of students).

Main activities
Main activities:
- Implement extensions related to inter-procedural analysis and dynamic scheduling
- Implement improvements and correct bugs
- Lead a user community
- Write documentation and reports
- Supervise students

Additional activities:
- Contribute to scientific publications
- Present the works’ progress to the research team and to the international community

Skills
Technical skills and level required: expertise in C/C++ programming and Linux/Unix systems; good knowledge of assembly language and processor architecture; knowledge of compilers and compilation techniques; knowledge of parallelism and code parallelization techniques; some knowledge of the API of the LLVM compiler would be a plus.

Languages: fluent English.

Relational skills: ability to work in a team, capacity to listen and to share.

Benefits package
- Subsidised catering service
- Partially-reimbursed public transport
- Social security
- Paid leave
- French courses

Remuneration
Remuneration: between 2632 € and 3340 € according to experience and diploma.

General Information
- Theme/Domain: Architecture, Languages and Compilation
- Town/City: Strasbourg
- Inria Center: CB Nancy - Grand Est
- Starting date: 2018-09-01
- Duration of contract: 2 years, 6 months
- Deadline to apply: 2018-06-30

Contacts
- Inria Team: CAMUS (DGD-T)
- Recruiter: Clauss Philippe / philippe.clauss@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.

The keys to success
- Essential qualities in order to fulfill this assignment are feeling at ease in an environment of scientific dynamics and wanting to learn and listen.
- Passionate about innovation, with expertise in C/C++ development and strong influencing skills. A thesis or significant experience in the field of optimizing compilers, as well as a significant experience with the LLVM compilation framework, are real assets.

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). Authorization 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.