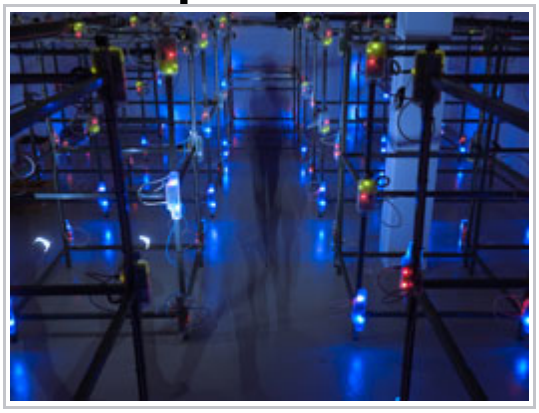
Young graduate engineer positions - Research and Development



Hubert Raguet

Are you a young graduate engineer? Do you have no more than a year's experience? Would you like to begin your career in a top-level research environment? Inria offers you opportunities in the form of fixed term contracts of between one and two years' duration within a small team of scientists. Throughout this contract, you will be mentored. These jobs will enable you to acquire some worthwhile initial work experience in computer-science software development and applied mathematics. Join us at Inria Bordeaux - Sud-Ouest!

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Implementing interoperability among internationally leading runtime systems

Position type: Engineers
Functional area: Bordeaux (Talence)
Research theme: Networks, systems and services, distributed computing
Project: STORM

About Inria and the job

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 STORM Research Team at Inria and LaBRI Laboratory in Bordeaux, France, works on the topic of High Performance Parallel Computing. It designs code optimizing techniques for the whole programming tool chain, at the compiler level, at the runtime system level, and at the execution analyser level, with a focus on heterogeneous platforms.

Mission

Together with Team STORM, Several teams developing worldwide leading HPC runtime systems received supports from European Commission's H2020 Program to partner within Project INTERTWinE, in order to promote synergy and to implement interoperability between their own programming environments. Team STORM's StarPU runtime system provides a framework for task scheduling on heterogeneous, accelerated platforms, together with an API for implementing various classes of scheduling algorithms. This scheduling framework jointly works with a distributed shared-memory manager to optimize task mappings and data transfers, and to overlap communications with computations. Team STORM is also involved in the development of the KStar OpenMP compiler. This source-to-source compiler generates runtime system calls from portable, standard compliant application OpenMP code.

Job offer description

In this context, the proposed mission is threefold. The first direction will be to design, implement and test runtime interoperability programming interfaces, together with StarPU developers and in tight cooperation with partners from Project INTERTWinE, aiming at performance and expressiveness as primary objectives. This first direction will involve developments within StarPU, as well as within the KStar compiler.

The second direction will be to work together with partner developers to port scientific codes on top of StarPU, leveraging the interoperability framework, to enable seamless, cooperative resource sharing with other programming support software involved.

The third direction will be to take part in Team STORM's reporting and dissemination effort as member of Project INTERTWinE, such as contributing standard evolution proposals and providing training sessions for project members and potential users.

Skills and profile

. Mastering software development under UNIX-like operating systems

. Good level in C language programming, system programming and parallel programming

. Mastering technical and scientific English

. Good writing skills

. Additional Appreciated Skills: Knowledge of MPI, OpenMP

Benefits

- Start Date: ASAP

- Qualification level: young graduate engineer

- Duration: until September 30, 2018

- Salary : from 2546,00 euros gross monthly

- Contact RH: laure.pottier_schupp@inria.fr

- Scientific contact: olivier.aumage@inria.fr

Team STORM: https://www.inria.fr/en/teams/storm

StarPU: http://starpu.gforge.inria.fr/

KStar: http://kstar.gforge.inria.fr/

Additional information

Security and defense procedure 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. Warning Applications must be submitted online on the Inria website. Processing applications submitted by other channels is not guaranteed.

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Application requirements

Holders of a master or an equivalent degree obtained in 2015 or 2016 may apply for a position vacant. This condition of date does not apply to disabled candidates.
No nationality condition

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