2018-00424 - [Campagne post-doctorat 2018/CRI PARIS] - Post-Doctoral Researcher on mixed-criticality multicore scheduling

Contract type: Public service fixed-term contract
Renewable contract: Oui
Level of qualifications required: PhD or equivalent
Fonction: Post-Doctoral Research Visit
Level of experience: Up to 3 years

Context

The members of the AOSTE2 team (https://www.inria.fr/equipes/aoste2) study time critical embedded communicating systems. Their results concern both probabilistic and non-probabilistic approaches while the interactions between different variability factors are considered. Currently, they collaborate with the partners of the FUI collaborative projects CEOS (https://www.ceos-systems.com) and WARUNA.

Assignment

The position is dedicated to the study of the multicore scheduling for mixed-criticality applications while considering the impact of scheduling choices on the worst-case execution time of those applications. Solutions based on global and partitioned approaches will be compared for multicore processors that use architecture features like caches, pipelines and branch-predictors. Two case studies allow to validate the approach in the context of drone applications and autonomous cars.

Main activities

- Propose scheduling algorithms based on global and partitioned scheduling approaches taking into account communications
- Study the schedulability conditions of those algorithms
- Compare their performances
- Participate to the team collaborations with partners within Inria and outside Inria
- Participate to the drafting of technical documents and to their presentation in the main scientific events of our domain

Skills

Technical skills and level required: real-time scheduling background
Languages: English
Other valued appreciated:
- strong mathematical background
- statistical estimation
- good understanding of the interactions between the modelling and the implementation of an embedded communicating system

Benefits package

- Subsidised catering service
- Partially-reimbursed public transport

Remuneration

- Location: Paris 12ème
- Gross Salary per month: 2 653€ brut/mensuel

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).

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.
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