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ESR 2 Position: FPGA ^[1]

Do you want to work on high-speed reconfigurable logic at CERN and at Intel?

ICE-DIP ^[2] is the Intel-CERN European Doctorate Industrial Program, a Marie Curie Actions project within the European Union's 7th Framework Programme. For its newly opened research posts, ICE-DIP ^[2] is seeking bright candidates in the areas of computer science and engineering to undertake doctoral training.

The Challenge

CERN is the European Organization for Nuclear Research ? a world-wide particle physics laboratory in Geneva, Switzerland and home to the largest machine ever built by man, the Large Hadron Collider (LHC). Every year, the four major LHC experiments collect over 25 petabytes of data. These collaborations are now planning upgrades which will increase data rates by as much as 100x within several years ? but computing facilities fit to handle such amounts of data do not exist yet.

How can you help?

If you're an enthusiastic and talented student or young professional thinking of a doctorate, you can make a difference. If successful, you will be offered a CERN Fellowship contract with a maximum duration of 3 years.

You will implement a data pre-processing system closely integrating both microprocessors and reconfigurable logic. The aim is to develop a general methodology for integrating traditional sequential software with highly parallel hardware (i.e., a new programming model or an improvement of an existing one). This includes the study of the effective integration of hardware accelerators in reconfigurable logic (FPGAs) with commodity processors.

You will be registered on the structured PhD programme at the National University of Ireland Maynooth (NUIM), with fees covered for the first three years. Your academic supervisor will oversee the academic aspects of your work necessary for you to obtain your PhD degree.

Further information and requirements

You need not have graduated yet, but if you have, your graduation should have occurred after September 1st 2009. All our posts offer a competitive remuneration package and are open to EU and non-EU nationals alike.

Scientific and technical skills required:

- Background in one of: physics, computing, electronics or related field (BSc 4 years or equivalent).
- Good knowledge of two or more of the following:
 - embedded systems,
 - digital logic design,
 - systems level programming,
 - computer architecture.
- Working knowledge of performance metrics
- Work in radiation controlled areas will be required (no prior experience needed)
- Interventions in underground installations will be required (no prior experience needed)

Non-technical skills required:

- Open mind with a hunger for science and a desire to enter a doctoral program.
- Flexibility and willingness to travel ? mobility is a key part of the Marie Curie Actions and you will spend approximately 50% of your appointment away from CERN. You will stay at CERN in Switzerland, at NUIM in Ireland and at Intel in Germany over the course of the project, and are expected to participate in international conferences.
- Willingness to develop a broad portfolio of skills
- Good knowledge of English - both oral and written - is mandatory. Applicants whose first language is not English will be required to provide evidence of competency at IELTS 6.5 or equivalent (e.g. CAE, CPE).

Go to www.cern.ch/jobs to apply - make sure to specify your priorities in the application if you apply for multiple postings. Should you have questions, please send them by e-mail to [icedip.jobs\(at\)cern.ch](mailto:icedip.jobs(at)cern.ch) (inquiries only - emailed job applications will be discarded). Deadline to apply: 31 May 2013.

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