

Ph.D. Student in Reconfigurable Computing for Cyber-Physical Systems (@UPM)

KEYWORDS: Embedded / Cyber-Physical Systems; Reconfigurable Systems; Dataflow Architectures; Run-time Adaptation.

In the Centre of Industrial Electronics (CEI) at Universidad Politécnica de Madrid (UPM), we are looking for a highly motivated and talented PhD student in the field of Reconfigurable Computing for Cyber-Physical Systems. The proposed PhD research project is focused on the following topics:

- Design of Dataflow-oriented hardware accelerators for stream processing in Cyber-physical Systems.
- Automatic exploration of task/data level parallelism.
- Design and optimization of run-time adaptation strategies.
- Generation of embeddable error, performance and power consumption models for run-time estimation and prediction.
- Generation of deterministic reconfiguration models for predictable behavior.
- The proposed techniques will be integrated in a multi-layer design environment.

The PhD candidate will be part of a highly international and enthusiastic team. This 3 year position will be funded within the scope of the H2020 project "CERBERO - Cross-layer model-based framework for multi-objective design of Reconfigurable systems in uncertain hybrid environments", started in January 2017 (<http://www.cerberoh2020.eu/>). The 3 years PhD scholarship includes health insurance coverage and a net salary competitive for living standards in a city as Madrid. Expenses for attending conferences, summer schools and workshops are also covered with the available funding.

BASIC QUALIFICATIONS: Master in Electrical / Computer Engineering, Computer Science, Physics; or similar. Previous research activities in the fields of interest will be highly appreciated.

PREFERRED SKILLS: Very good knowledge of digital hardware design and VHDL; High-level synthesis tools for FPGAs; Design of mixed software/hardware systems; Operating Systems and C/C++ programming for embedded systems. Experience with partial reconfiguration and dataflow models of computation and architectures is also valuable. Fluent in English. There is no need to speak Spanish in this position.

POSITION AVAILABLE: The selection procedure will open in January 2018 and will be maintained opened until the position is covered. The starting date is flexible, but preferred ASAP.

INFORMATION: If you are interested in this position and want to have more details about it, please contact *Dr. Eduardo de la Torre* (eduardo.delatorre@upm.es) or *Dr. Andrés Otero* (joseandres.otero@upm.es), including the reference *PhD_RC_CPS*. For the formal application, the following documents will be required:

- CV
- Academic transcript of courses followed and grades obtained provided by your institution.
- Brief letter describing your motivation and previous experience.
- Any reference you can provide from professors of the field.