

Master and Traineeship Projects
Electronic Systems (ES)
Eindhoven University of Technology
in collaboration with Intel
and other high-tech companies

Context

Heterogeneous systems based on configurable Application Specific Instruction Set Processors (ASIPs) and hardware accelerators represent a competitive embedded system solution for modern highly-demanding applications in communications, multimedia, encryption, medical instrumentation, and several other areas. One of the main issues in the design of such systems is a lack of automatic Design Space Exploration (DSE) and synthesis tools for efficient application-tailored architecture synthesis of ASIPs and accelerators, as well as application parallelization and mapping on the ASIP and accelerator based computing platforms. The European project ASAM created a novel design flow and a prototype automatic DSE and synthesis tool-set for this aim. The design-flow and its tool-set are currently researched when using several actual industrial designs as benchmarks, refined and extended.

Project description

In relation to the ASAM project, the Electronic Systems Group has currently several Master and Traineeship Projects available in collaboration with Intel Benelux, ST Microelectronics and several other leading high-tech companies.

These positions are in various fields of:

- Development and/or Implementation of Application-specific Processor, Accelerator and System-on-Chip (SoC) Architectures for advanced (wireless) communication, multimedia, encryption and medical applications; and
- Electronic Design Automation (EDA) for the development of the above mentioned architectures and mapping of applications on the corresponding computing platforms.

As different positions are related to various system development levels (from the requirement specification down to the actual hardware synthesis and software compilation), as well as, various aspects of hardware and software design, they are appropriate for a broad range of students with various interests in applications, system, processor, hardware and software development, and electronic design automation.

More information on the ASAM project can be found at: <http://www.asam-project.org/>

The Electronic Systems Group invites students interested in the related Master or Traineeship Projects.

Candidate profile

The candidate should have:

- Bachelor degree in Electronics, Electrical Engineering, Informatics or similar area with very good academic results
- Good knowledge of digital hardware and computer architecture
- Knowledge of and experience with C/C++ and/or Java programming (for software related projects)
- Knowledge of and experience with Verilog or VHDL (for hardware related projects)
- Basic understanding of formal models
- Good oral and written communication skills in English

Contact

Students interested in the projects to be performed in the framework of the Erasmus Socrates exchange are asked to **contact in a short term:**

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