PROCESS TECHNOLOGY SELECTION BASED ON HIGH-LEVEL DESIGN ENTRY

At imec, Ultra low power DSP

LEVEL OF TOPIC

- BSc / MSc

MASTER’S PROGRAMS

- Computer Science and Engineering.
- Electrical Engineering.

DURATION

- Internship, thesis possible

SKILLS

- Bachelor or Master-level electrical engineering or computer science student.
- Interested in using circuit simulation environment to characterize test circuits.
- Experience in Java programming.
- Experience in digital design is considered a plus.
- Experience in Unix scripting and circuit simulation is considered a plus.
- Motivated student eager to work independently and expand knowledge in the field.
- Good written and verbal English skills.
PROJECT DESCRIPTION

At Holst Centre research on ultra-low power digital design is performed. An important dimension is the selection of an appropriate processing technology considering design constraints such as performance and power as well as cost. The Holst Centre already has means in place to perform such assessment. The objective of this internship is to create a platform independent front-end that allows intuitive assessment of different technological options.

A basic set of characterization data is available and integrated into an spreadsheet calculator. Within the project the characterization of technologies will be extended to additional processing nodes as well as new circuit structures. The chosen candidate will analyze the data for consistency and format for further processing in the calculator.

In parallel, a new graphical user interface will be developed in Java adopting key elements of the existing spreadsheet calculator. Additional elements are the interactive integration of characterization data as well as data mining with the focus on finding optimal technology choices under specific user constraints.

We are looking for an enthusiastic student in electrical engineering. The traineeship will take place at the Holst Centre located at the High Tech Campus in Eindhoven.

TASKS

- Develop Java GUI to represent and explore characterization data.
- Extend Java code to allow search for specific optimization criteria.
- Enable design space exploration incl. ‘what-if’ analysis.
- Run simulations extending the existing set of characterization data.
- Analyze and prepare data for processing in the calculator.

MORE INFORMATION

Apply for this project via the Holst Centre’s website: Holst Centre. For other thesis opportunities at the Holst Centre see http://www.holstcentre.com/en/Talent/ThesisOpportunities.aspx.