Bachelor-/Master Theses

Approximation Advisor Tool for Error Resilient Applications

In this thesis we will develop a software tool using LLVM compiler to search design space with several approximations techniques and find the best accuracy vs. benefit trade-off. This tool will be useful to users/developers in taking advantage of approximations in an automated manner.

Tasks:
- Development of a software advisor tool for approximate computing with support for a set of approximation techniques.
- Search the design space during compilation in an automated manner.
- Demonstration using existing benchmarks and their analysis.

Skills acquired with the Thesis:
- Compiler development and integration for hardware/software co-design
- Work in a research environment
- Technical writing
- Prior knowledge on Approximate Computing is not required

Required Knowledge:
- Compiler background, ideally LLVM
- Programming skills

Helpful skills (not required but helpful):
- Scripting skills (tcl, python, makefile)
- Experience with EDA flow

Start Date:
Immediately or within a couple of months

Supervision:
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Questions? → Feel free to contact us.