MEng Design Project Announcement – 2017

Project title: DE1-SoC Board, Cyclone5 FPGA OpenCL

Brief Description of Design Project Goals:
Develop OpenCL examples which make sense for a board with a dual ARM9 processor and FPGA (DE1-SoC Board)

Overview:
We are specifically interested in teaching how to use the FPGA as an accelerator for the ARM9 processors using openCL, and how to measure power/performance tradeoffs.

Specific MEng Contribution:
The student will design and implement a project suitable for student examples. Emphasis on graphics, image analysis, and audio projects with heavy computing requirements. Possibilities might be:
-- Image analysis
-- GPU for ARM
-- Mandelbrot Set calculation
-- Video motion detection
-- Neural network
-- Stochastic modeling of disease spread

ECE Field Advisor Name: Bruce Land
- Email – brl4@cornell.edu
- Phone – 255-7994
- Office - 214 Phillips

Project Web Site:
General description of DE1-SoC http://people.ece.cornell.edu/land/courses/ece5760/

Number of MEng Students Needed: 2-4

Required Skills: Familiarity with embedded LINUX. Familiarity with OpenCL. Ability to read vendor documentation and create interesting examples.

Estimated Project Time Frame: 2017-18 AY, 2 semesters