

Propose a vacation student project for Summer 2019

Deadline for making your proposal(s): 17:00 Friday 22 March 2019. This is a hard deadline.

This form is for one project proposal, so to propose multiple projects please submit a separate form for each project. Any queries, do ask - Toby.

Project supervisor email *

dirk.koch@manchester.ac.uk

Title of the project *

FPGA OS Demos

Source of funding *

- School funding requested
- You have your own funding (e.g. research grant)

Objective of the project *

The APT group has developed an operating system for FPGA-ARM hybrids that allow multiple applications sharing the FPGA and CPU resources in a way that automatically maximizes throughput for dynamic workloads.

The goal of this summer project is developing nice demonstration applications (e.g., Mandelbrot, object detection, particle system simulation, etc.) in a small team and writing a process monitor that can visualise and control hardware and software tasks.

Number of students requested (justify if > 1) *

4 because of multiple different demos to be implemented

Start date, end date, total duration (weeks) *

May 13 - July 31 (11 weeks)

The benefit to the School *

Research outcome, extra training for students, eventually an artifact for demonstration, visit days etc.

The benefit to the student *

learning about FPGA technology and its programming

Skills needed by the student. *

Programming skills in Verilog, VHDL, OpenCL and/or C/C++

Details of the work that the student would do *

Developing nice demonstration applications (e.g., Mandelbrot, object detection, particle system simulation, etc.) in a small team and writing a process monitor that can visualise and control hardware and software tasks.

Infrastructure requirements and any required staff support other than the project supervisor *

Normal school machine in any lab will do the job.

Supervision arrangements throughout the duration of the project (named staff and dates covering the entire duration) *

Dirk Koch, Khoa Pham, Anuj Vaishnav

Location of the project work (building/room) NB projects must be on-campus *

any lab will do the job

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