

Propose a vacation student project for Summer 2020

This call is now closed

The deadline for making your proposal(s) was 18:00 Friday 13 March 2020.

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 *

FOS (an FPGA Operating System) for Datacenter FPGAs

Source of funding *

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

Objective of the project *

FPGAs are now widely used in embedded systems, cloud service installations and even supercomputers. To manage FPGA resources, we have developed FOS - an FPGA Operating System. The goal of this project is to port the FOS services that had been developed for FPGA chips with an ARM SoC running Linux to work with datacenter FPGAs.

Number of students requested (justify if > 1) *

1

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

June 22nd, August 28th, 10 weeks

The benefit to the Department *

Interesting research work which is planned to be published

The benefit to the student *

Learn about new things, work on real-world problems

Skills needed by the student. *

The candidate should have taken Embedded Systems and/or Operating Systems and should have experience with Linux low level programming (including drivers)

Details of the work that the student would do *

Understand FOS and its API and the hardware development flow for implementing accelerators (modules can be implemented in Verilog, VHDL, C/C++ and OpenCL). Porting of FOS services to a datacenter FPGA. This requires developing a data management layer that copies data between a host machine and the FPGA accelerator card.

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

Any lab machine would do the job. The student is expected to be integrated into my research group during the project. Access to the FPGA is provided through a remote connection.

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

Dirk Koch, entire time

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

Any lab would do the job.

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