

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 *

Build an FPGA

Source of funding *

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

Objective of the project *

Implement an FPGA that will be manufactured with TSMC. A main task of this project will be adapting an academic FPGA CAD tool flow to support our new FPGA fabric. This will be our second FPGA chip and the first version (currently with TSMC for manufacturing) contains a RISC V CPU with an embedded FPGA for custom instruction set adaptations.

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. *

Good understanding of hardware and FPGAs as well as data structures and algorithms. Experience in programming and software engineering.

Details of the work that the student would do *

Understanding of a given FPGA fabric generator (written in Python), understanding of open-source FPGA CAD tools (Yosys, ABC, nextpnr) and their file formats.

Developing of a new FPGA architecture and adapting CAD tools to support that architecture. Work may optionally include full custom ASIC design (e.g., to optimise the blocks that carry out the switching on an FPGA).

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.

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

Dirk Koch and Nguyen Dao for the entire time

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

Any lab would do the job.

This content is neither created nor endorsed by Google.

Google Forms