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 *

lucas.cordeiro@manchester.ac.uk

Title of the project *

Support public engagement activities in BlueDot festival.

Source of funding *

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

Objective of the project *

We request two vacation students to support our public engagement coordinator to participate in BlueDot (https://www.discoverthebluedot.com/).

Number of students requested (justify if > 1) *

Two students are requested.

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

4 weeks (June 24th to July 21st)

The benefit to the School *

Bluedot is a major national Science Fair as well as 3-day music festival, attracting something like 70,000 people, individuals and families. Most of the science subjects in the university are represented, and Computer Science has been at the previous festivals with very popular activities for children of all ages (from 3 to 93!), often with long queues to participate. This is a major event on our Social Responsibility calendar with outreach to an audience unlike any of our other activities.

The benefit to the student *

The students will learn skills related to drone and robot programming.

Skills needed by the student. *

C/C++ programming languages

Details of the work that the student would do *

The vacation students will prepare three demonstrations:

(1) Micro-controller programming;
(2) Drones programming;
(3) Robot programming;

These demonstrations will allow the participants to get the opportunity to find out how computers work, how drones are programmed to fly, and how robots interact with the world around them.
In particular, these demonstrations will allow us to interact with the participants as follows:

(1) How do we get computers to do what they're told? Participants will learn about how computers can be made to carry out specific tasks from the first steps of designing an algorithm to how this can be described to a computer and how it executes.
(2) How do drones get from A to B? Participants will explore how drones use path planning and trajectory algorithms and help get our drones flying about without crashing into things.
(3) How do robots work? Participants will get hands-on experience programming robots to interact with their environment via various sensors and actuators.

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

Existing drones and robots already available in our laboratories.

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

Lucas Cordeiro and Ben Possible (June 24th to July 21st)

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

Kilburn building / Collab.