Sandwich Student: Developing data analysis software at the ISIS Pulsed Neutron and Muon Source

Background

STFC offers you an opportunity to gain paid practical experience as part of your degree, learning on the job and working on real projects alongside expert scientists and engineers.

You will be employed by the ISIS Pulsed Neutron and Muon Source at the Rutherford Appleton Laboratory to deliver software for analysis of data from ISIS instruments.

You will work within Mantid project, an international collaboration which is developing analysis software for neutron and muon instruments within a contemporary structured programming framework. The Mantid project is an open source development that is developed and supported by a core project team of developers across three countries. Within the team you will be responsible for the development (using C++ and Python) and testing of algorithms specific to the analysis of neutron and muon data; regular liaison with facility scientists will be important to ensure the developed code meets the scientific requirements.

List of Duties / Work Programme / Responsibilities

The four sandwich student positions within the team will focus on the development of software for the analysis of data measured on Molecular Spectroscopy instruments, Muon instruments, Reflectometry instruments and Diffraction instruments.

A sandwich student project will involve:

1) Working with beamline scientists from within an ISIS group to deliver algorithmic customisations, and changes to base workflows
2) Generating and adapting user interfaces which execute the aforementioned algorithms and workflows.
3) Identifying and optimising runtime performance in key areas.
4) Working to improve a technique area across all international collaborating facilities.

In each case, the requirements will be defined in consultation with facility scientists, and you will be responsible for coding, testing and demonstrating solutions. A more senior developer will be available to help. If time permits, there may be the opportunity to become involved in other aspects of the Mantid project, whether coding algorithms or working to enhance the platform. This position is a chance to gain experience in programming within a major national scientific laboratory.

Personal Skills and Attributes

The placement would be suitable for a student studying for a degree in Computer Science (or a related discipline). A track record of object oriented programming (ideally in C++, but training is available) and a keen interest in physics or mathematics would be advantageous.

Student Benefits

You will receive a salary of £17,676pa, 30 days of paid annual leave, and over the course of the studentship you will gain real world experience of:

- Cross platform development
- A detailed knowledge of C++
- Multi-threaded development and debugging
- Python in a scientific environment
- GUI development using Qt
- Automated test experience
- User requirements and design
- Team working as an equal partner in a professional development team

Applications

To apply please send a CV and covering letter to Nick Draper (nick.draper@stfc.ac.uk) before the 24th of January 2016. Shortlisted applicants will be asked to complete a short online programming test at a time of their choice during the week commencing the 25th of January, followed by a skype interview in the week commencing the 1st of February.

Other Information

Details about the Mantid project can be found at http://www.mantidproject.org.
Information on ISIS and the ISIS muon instruments can be found at http://www.isis.stfc.ac.uk and group specific information from http://www.isis.stfc.ac.uk/groups/molecular-spectroscopy/molecular-spectroscopy-3384.html, http://www.isis.stfc.ac.uk/groups/muons, http://www.isis.stfc.ac.uk/groups/large-scale-structures/large-scale-structures-2579.html, http://www.isis.stfc.ac.uk/groups/crystallography/crystallography2165.html.