Candidate Information

Position: Research Software Engineer
School/Department: School of Mathematics and Physics
Reference: 22/110293
Closing Date: Monday 24 October 2022
Salary: £35,333 - £40,931 per annum.
Anticipated Interview Date: Friday 11 November 2022
Duration: 3 years

JOB PURPOSE

To take a leading role, under the supervision of the principal investigator (PI), in the design, development, deployment and adoption of data standards and APIs for research software developed by the international atomic, molecular and optical physics community.

Although the role is embedded in an academic research group at Queen's University Belfast, the post holder will support software development, and the scientific research that software enables, working with an international community of scientists

MAIN ACTIVITIES/RESPONSIBILITIES

Specific goals of the project:
1. Work with a community of scientists, research software engineers and other stakeholders to design a robust data standard for atomic, molecular and optical (AMO) physics applications.
2. Implement this data standard into existing I/O elements of AMO software, and refactor the code to leverage the standard for internal data structures.
3. Work with the PI and the broader community of developers on the design and implementation of an OpenAPI-compliant API for AMO physics software that allows easier interfacing of different AMO applications, and an improved UI.
4. Promote and support the adoption of the data standard and API within the AMO community.

Duties:
1. Plan and undertake the software development, documentation and reporting necessary to achieve the aims of the project.
2. Contribute to the design, planning and execution of computational research experiments (research computing) within agreed projects.
3. Co-produce high-quality research outputs (software, documentation, reports, journal/conference papers) consistent with project aims and commensurate with the post holder's career stage and goals.
4. Promote and outputs at national and international conferences.
5. Assist the PI in preparing funding proposals and applications to external bodies.
6. Carry out occasional educational supervision, demonstrating or training duties within the post holder's area of expertise and under the direct guidance of a member of academic staff.
7. Undertake other duties relevant to the project's success, including administrative duties and additional training and development activities as required.
8. Promote, demonstrate and disseminate good practice for software engineering and reproducible research with collaborating partners
9. Keep abreast of developments in techniques and technology, taking responsibility for your own self-development in technical, scientific and specialist knowledge.

ESSENTIAL CRITERIA:
1. Hold a degree in a relevant subject (e.g. software engineering, software development, computational physics, computer science).

2. At least 2 years' of relevant experience to include:

- Working in a software engineering capacity;

- A proven track record of using software engineering practices to support the development of software projects;

- Working effectively as part of a team in the design and development of software projects; and

- Working with multiple stakeholders from different disciplines.

3. Willingness to undertake training in research methods and other related skills as required.

4. Practical problem-solving skills, independence of thought and initiative

5. Ability to communicate complex information effectively in oral and written format.

6. Ability to build relationships to develop internal and external networks.

7. Ability to assess and organise resources.

DESIRABLE CRITERIA:

1. Hold a higher-level degree (Masters, PhD etc.) in a relevant subject (e.g. Software engineering, software development, computational physics, computer science).

2. Experience of the design and/or implementation of data/software standards in software projects.

3. Experience working with legacy code.

4. Experience working with high-performance computing facilities.

5. Experience of delivering, and willingness to deliver, training (broadly defined) on the use of software, and software development tools.

6. Experience and willingness to contribute to open-source projects.

7. Willingness to travel internationally to visit project partners, and attend conferences/workshops.