Research Software Engineer

Department: Directorate of Technology, Estates & Facilities: IT Services (Research IT)

Hours of work: Full-Time / 37 hours a week

Contract type: Open

Salary: £34,308 - £42,155 a year (plus £3,000 Market Supplement) / Grade 6
Introduction

The Directorate of Technology, Estates and Facilities [DTEF] is responsible for ‘providing outstanding work, study, research facilities, and facilities to enhance the student experience, on campus and online’.

This role is part of the Research IT Team within IT Services. The Research IT Team sits within IT Services. We are responsible for maintaining and offering user support for our £2.5 million Viking HPC facility. We also provide Linux support for a number of devices and facilities within the university.

Main purpose of the role

Join the University of York Research IT Team where you will have the opportunity to engage with academics across the university facilitating both research and teaching. As part of this exciting team you will provide specialist software development support on research projects within the University.

You will have excellent software engineering skills, be able to distil and promote good practice. We are looking for someone who has good skills in designing and developing modern, maintainable software, experience with parallel programming frameworks and knowledge of at least one compiled language for HPC, such as C++ or Fortran. You will bring computational thinking, and support the use of modern computational techniques such as distributed computing, machine learning and data mining. You do not need to be an expert in everything on day one -- we’re looking for someone who is excited and motivated to learn new skills.

You can find out more about the team/research computing at the university here: https://www.york.ac.uk/it-services/research-computing/

Key responsibilities

(Role holders will be required to undertake some or all of the duties below)

1. **Role Specific Responsibilities**
   - Develop software using relevant skills and knowledge to interpret and implement the technical software requirements of academic research
   - Support research as an expert software engineering resource
   - Develop and validate software solutions to enhance research and related activities under the supervision of senior colleagues
   - Assist in the identification and development of potential areas of research and for independent or collaborative research projects
   - Distil and promote good practice in software development (e.g. version control, maintainability, readability, repeatability, security)
   - Provide realistic estimates for development and operational work to support team planning and progress tracking
   - Support and promote the use of Viking (York) and Bede (N8) computing facilities in research
   - Support and promote the use of cloud services
   - Contribute to knowledge sharing and Coding Club events
• Gain a good understanding of research at the University, use this to help IT Services develop new and improved services and software provision
• Provide user training and support
• Keep abreast of developments in techniques and technology, taking responsibility for own self development in technical, scientific and specialist knowledge

2. University of York Responsibilities for Grade 6

Service and Operational Delivery
• Oversee a responsive and proactive support service to ensure service expectations are met.
• Collect and analyse stakeholder feedback to help define needs and requirements and the design and planning of services.
• Contribute to operational leadership teams and decision making to shape the nature and level of support services.
• Implement changes to the design and development of a service.
• Accountable for delivery of a service within a defined area or defined responsibilities.
• Make effective use of digital solutions to carry out operational activity and implement efficiency improvements.
• Depending on the role, may be required to act as operational line manager - setting, monitoring and overseeing the work of the team on a day to day basis
• Act as a supportive and encouraging member of a team. For roles at this level with supervisory responsibilities, demonstrate compassion and give advice on commonly occurring wellbeing issues.

Continuous Improvement
• Analyse service and operational delivery data and provide reports, making recommendations for improvement as appropriate.
• Ensure the review and improvement of systems and procedures in line with University frameworks.
• Review internal and external practice to identify opportunities for future improvements or efficiencies.
• Apply expertise to identify, understand and propose resolutions for issues or problems.
• Proactively identify opportunities for building personal knowledge and skills for self and others.
• Deliver knowledge sharing on specialist defined processes across the broader team.

Specialist Contribution
• Provide advice to stakeholders in relation to complex policies, procedures and regulations.
• Provide specific technical advice to ensure compliance with legislation, statutory duties, etc.
• Provide specialist expertise and support with complexity of data and information sources, providing interpretation and analysis.
• Carry out in-depth, complex investigations or searches; interrogate the information and data to identify trends and patterns.
• Deliver training, teaching and/or development delivery for stakeholders.

Collaboration and Communication
• Establish, maintain and develop productive and ongoing relationships with University stakeholders to create ideas for tactical service or operational delivery development.
• Build relationships and networks internally and externally to build and update knowledge and skills.
• Use a range of digital media and tools to communicate with a diverse range of key stakeholders.

Governance and Oversight
• Oversee activity to ensure all processes and transactions are delivered in line with regulatory and professional service and policy standards.
• Provide advice and training to stakeholders regarding compliance and regulations relating to the area of responsibility.
• Contribute to the creation or development of policy and procedures to take account of internal and external changes.
• Ensure activities and documents comply with internal University and external regulation, policy and procedures.

Planning and Organisation
• Plan, organise and prioritise own workload (and, where applicable, the workload of team members on a regular basis), taking into account operational needs and changing circumstances of the team over the short to mid term.
• Plan and manage longer term programmes of work, monitoring progress as required.
• Lead the delivery of projects to facilitate service operational change or play a role in University-wide projects.
## Person specification

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<tr>
<th>Role Specific</th>
<th>Essential / Desirable</th>
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<tbody>
<tr>
<td>Demonstrable knowledge and experience of current software engineering practices for example version control and testing;</td>
<td>Essential</td>
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<tr>
<td>Proven experience in software development in multiple languages. In particular at least one compiled language for high performance computing, either C++ or Fortran</td>
<td>Essential</td>
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<td>Experience with MPI and OpenMP or other parallel programming models.</td>
<td>Desirable</td>
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<td>Experience of developing software to assist with independent and collaborative projects</td>
<td>Essential</td>
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<td>Experience of working in a research environment</td>
<td>Desirable</td>
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<td>Background in a computational field (such as Physics, Chemistry or Computer Science)</td>
<td>Desirable</td>
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<td>Ability to contribute to documentation read by an audience ranging in technical experience</td>
<td>Desirable</td>
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### University of York Person Specification for Grade 6

#### Qualifications:

Level 3 qualification. (Qualifications at this level include A levels. Please view the full list). We also welcome applicants with equivalent non-uk qualifications or equivalent professional experience. Essential

#### Skills - demonstrates the ability to:

- Lead projects                      Essential
- Gather, analyse, interpret and report complex data/information    Essential
- Use digital technologies including Google applications and/or Microsoft Office    Essential
- Communicate effectively in verbal and written formats, including the use of a variety of digital tools    Essential

#### Behaviours:

- Works collaboratively with others    Essential
- Delivers a quality service          Essential
- Develops self and others            Essential
- Actively champions respect, inclusivity, equality and diversity    Essential
- Identifies and implements continuous improvement    Essential