Senior Research Software Engineer and Manager - IT Services - Grade 8 - 101400
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Job Identification
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Manager
Locations
• Edgbaston, Birmingham, West Midlands, B15 2TT, GB
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Job Schedule
Full time

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Job Description

Position Details

IT Services

Location: University of Birmingham, Edgbaston, Birmingham UK

Full time starting salary is normally in the range £44,414 to £52,841 with potential progression once in post to £59,450

Grade 8

Full Time, Permanent

Closing date: 02 May 2023

Background

The University of Birmingham aspires to establish itself as a World Top 50 university by 2030, and the [Advanced Research Computing](#) department (ARC) has a key part to play in achieving this aim. ARC is a well-respected, award-winning team with a national and international profile. Our team is continuously growing, and we are excited to announce that we are looking for talented individuals to fill seven brand new posts:

- Senior ARC Systems Engineer
- Senior Research Software Engineer and Manager
- Senior Research Data Scientists (3 posts)
- Research Applications Specialist
- Summer student – Research Software Assistant

For further details of these posts please see our [blog](.).

Achieving the global ambitions of our University strategy depends on our people - and we are proud of our highly talented and engaged professional services colleagues. Our culture is ambitious and high-performing, but also supportive and inclusive. Career progression is encouraged, and you will have the opportunity to take responsibility for your own professional development and wellbeing. We actively support collaboration within and across disciplines and roles. Our staff have high levels of engagement and pride in the University.

Roles at this level provide authoritative professional advice across a range of activities and/or will lead and manage diverse team(s) and resources. You will use your professional skills to make decisions, influence others' thinking and to negotiate with them to achieve an outcome. You will typically need to resolve problems where the solution is not immediately apparent. Significant evaluation and independent thought is therefore required to resolve ambiguity and work within grey areas. You will have wide discretion to decide on direction whilst ensuring activities are broadly consistent with operational policies. You will be able to influence policy through advising on the impact of policy change and implementation in your area of work. You will need to assess the impact of your activities across your area, with related areas and to ensure they fit with the broader objectives of the University.

Department Summary

Central IT services at the University of Birmingham use complex, large-scale architectures based on Unix, Linux, Windows and cloud technologies, coupled with advanced storage solutions. These need to be configured and maintained to the highest possible standards of reliability, performance and quality. Business continuity and high service levels are demanded equally for mission-critical research services as well as for those relied on for teaching, learning and administration.

ARC builds and runs (or buys-in) a range of specialist services for researchers, collectively known as BEAR (Birmingham Environment for Academic Research). Aimed at all disciplines, BEAR covers an increasingly broad spectrum of needs, ranging from the traditional HPC through storage and archiving solutions to collaboration and analytics tools and new 'on premises' cloud HTC offerings. ARC also supports the exploitation of specialist regional and national services, including HPC Midlands Plus and the new Birmingham-based Baskerville supercomputer. Together with the national supercomputer Archer (Tier 1) and Birmingham's own BEAR infrastructure, they form a powerful resource for research.

Role Summary

This post is established at the University of Birmingham, where the postholder will join a strong and dynamic group of Research Software Engineers with a particular focus on supporting researchers.

The Senior Research Software Engineer (RSE) will provide a technical software development and support service to academics from a wide range of disciplines. As a senior member of the Research Software Group, the RSE will help shape Birmingham's delivery of research software services.

This role is primarily technical, however a minority of the RSE's time will be spent line managing a small team of other RSEs in collaboration with the Research Software Group (RSG) Leader. In addition to the relevant managerial training courses available, the RSG Leader will guide and advise the RSE in the line management aspects of this role.

The postholder will collaborate closely with research colleagues from many different academic disciplines and will provide expert knowledge and skills to develop, improve, maintain and support high quality software solutions and access to services, fulfilling the requirements of research projects. The postholder will contribute to developing the knowledge and skills within the research community at all stages of the research software development cycle, e.g. by providing training and coaching sessions as well as promoting the adoption of best practices.

The postholder will be part of the Advanced Research Computing Team (ARC) in IT Services, a well-respected and highly performant team with a national and international profile. As the postholder develops in this role, they will be expected to collaboratively work with academic colleagues to secure external funding for future software development projects, to meet the growing demand for support in this area and ensuring sustainability of software created for research.

The RSE will have a varied and interesting workload that changes with the requirements that arrive from world-class researchers. The postholder will be joining an existing group of RSEs, and as such is likely to specialise in particular aspects of this job description – depending on their skills, the skills of the rest of the group, and the work available.

The Pool of RSEs within Advanced Research Computing has been set up to provide RSEs to work on funded research projects across all five Colleges at the University. As a Senior Research Software Engineer and Manager, you would commonly work for half of your time on one main funded research project; help to oversee a few other projects providing code review, support, mentoring and advice; and line manage a small team of other RSEs.

Main Duties

- In conjunction with the Research Software Group Leader: Oversee a technical software development and support service, available to all members of academic staff and researchers throughout the University; Develop and maintain a programme of work and a system for allocating the finite development resource effectively.

- Reporting to the Research Software Group Leader, line manage a small team of other RSEs.
- Provide advice, support, coaching, and coding services; crucially always with the aim of ownership and responsibility remaining with the research group. Prioritise tasks across multiple engagements to meet agreed objectives, ensuring effective communication to project leads. Manage the expectations of researchers and research groups. Engage with researchers at all development stages and disseminate best practices in the development of sustainable research software.
- Take responsibility and work collaboratively with research groups from across the University for the definition, documentation, development and satisfactory completion of collaborative software projects: defining requirements; devising solutions; agreeing timescales and priorities as well as identifying the risks to be managed. Each of these engagements will be unique in nature and complexity. They will typically range from requiring a few days to several months of effort.
- Build and maintain relationships with research communities within the University and beyond, seeking opportunities to contribute to research or funding sources for new projects. Work closely with researchers and contribute to research bids to funding bodies. This will mean defining the scope of work and the associated costs for software engineering support for the grant applications as well as the associated IT infrastructure and support costs. Contribute to research papers to be published in academic literature, and produce case studies.
- Engage with researchers at all development stages and model and disseminate best practices in the development and sustainability of research software.
- Contribute to raising awareness of BEAR and Tier2 services for researchers and the profile of the team. Help build active user communities locally and regionally, by contributing to seminars and networking events, encouraging the adoption of best practice, sharing knowledge and expertise. Contribute to the support of computational research at the University, within ARC and the wider research software engineering ecosystem. Provide software engineering input to assist the maintenance of the infrastructure and deliver integrated support and services for local and Tier2 research communities.
- Deliver training courses, devising content where applicable or, where qualified, delivering externally validated material, e.g. Software Carpentries. Content will vary from introductory to specialized and advanced levels.
- Liaise and engage with external professional networks within the software engineering sector, such as national RSE networks and the Software Sustainability Institute, to keep informed of the latest developments and sector initiatives. Maintain an awareness of technical developments, tools and ideas in research computing and in software engineering, including attending seminars, technical briefings, conferences and technical groups.
- In addition to University provided training and development, you will undertake sufficient personal and professional development as required, ensuring skills and knowledge are up to date so that the role is performed to the required level.
- Actively manages equality, diversity and inclusion through monitoring and evaluation and actively challenging unacceptable behaviour.
- Any other duties commensurate with the grade.

Person Specification

Working at this level you will be able to develop and demonstrate the following core competencies/transferable skills and will be expected to be flexible as required in supporting their department and wider University.

- Formal education to degree level or equivalent experience, preferably in a subject with a strong software engineering component.
- Relevant experience supporting software and software development environments, ideally in a science environment.
- Supporting researchers with complex requirements is desirable.
- Experience line managing a small team is desirable
- Broad and deep knowledge of software development and analysis processes, tools and techniques.
- Broad and deep knowledge of programming and programming languages – including at least one of Python, R, C++ or Fortran.
- Significant experience of one Linux and associated software applications is desirable.
- Experience with version control in git (using GitHub or GitLab is desirable).
- Experience with unit testing and continuous integration.
- Experience as a researcher is desirable.
- Experience with data science or machine learning tools is desirable.
- Good customer relationship management skills.
- Proven ability to work as part of a team to deliver services.
- A self-motivated learner with a track record of continually updating skills – each new project is likely to require learning something new.
- Excellent organizational/project management skills.
- Good communication skills, both written and oral.
- Good broad knowledge of C&IT, including latest technology industry trends.
- Knowledge of Higher Education, Research and its environment.
- Familiarity with ITIL would be an advantage.

Informal enquires to Andrew Edmondson, email: a.c.edmondson@bham.ac.uk

View our staff values and behaviours here

Valuing excellence, sustaining investment

We value diversity and inclusion at the University of Birmingham and welcome applications from all sections of the community and are open to discussions around all forms of flexible working.