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Research Software Engineer in Mobile Computing

Faculty of Engineering,
Department of Computer
Science



Overview

Applications are invited for a Research Software Engineer to work alongside Prof. Fabio Ciravegna in the Department of Computer Science in the research group OAK. The successful candidate will work specifically on the European funded project Seta (setamobility.eu). SETA creates technologies and methodologies set to change the way mobility is organised, monitored and planned in large metropolitan areas. The solutions are based on large, complex dynamic data from millions of citizens, thousands of connected cars, thousands of city sensors and hundreds of distributed databases. Seta has developed mobile tracking algorithms and associated applications (iOS and Android) which track both motorised and non-motorised mobility with sub-minute frequency. These apps are currently in use by dozens of thousands of citizens in the UK and we are now expanding in Europe in two large metropolitan areas with the involvement of dozens of thousands of citizens.

You will have excellent programming and test skills accompanied by an excellent degree in Computer Science. You will be required to use their experience in Android, etc. and this experience must be demonstrated with a portfolio. Good experience with client server architectures in NodeJS or equivalent architectures is essential along with a good knowledge of Javascript.

The Research Software Engineer will further develop and maintain the tracking software and associated applications developed for Android. This will also extend to the client-server architecture that sends and receives data to our servers – a large-scale architecture able to send and receive large amounts of data 24/7. The job will include both the development of bespoke interfaces and tracking strategies for external customers, as well as to support the development of new tracking algorithms in collaboration with Prof. Fabio Ciravegna.

Person Specification

Applicants should provide evidence in their applications that they meet the following criteria. We will use a range of selection methods to measure candidates' abilities in these areas including reviewing your online application, seeking references, inviting shortlisted candidates to interview and other forms of assessment action relevant to the post.

Criteria		Essential	Desirable
1.	A PhD in Computer Science or equivalent experience.	X	
2.	A high level of literacy and numeracy, excellent programming and testing skills.	X	
3.	Demonstrable experience in Android, etc. Experience must be demonstrated with a portfolio. Developers in iOS or hybrid environments (PhoneGap, React Native) may be considered. Applications in the fitness domain are a plus.	X	
4.	Good experience with client server architectures in NodeJS or equivalent architectures. Good knowledge of Javascript is required.	X	
5.	Good knowledge of software testing methodologies (for example, JUNIT).		X
6.	Demonstrable track record of developing at least one medium size project (for example, degree dissertation or equivalent) with excellent results.	X	
7.	Previous relevant work experience in industry or higher education.		X

8.	An understanding of the requirements of the fitness and or medical domain and or of mobility tracking using mobile phones.		X
9.	Have a high level of written and oral communication skills with the ability to discuss with users and to present to different target audiences in a range of formats (both written and oral).	X	
10.	Excellent command of both written and spoken English (for example IELTS 6.5 or above).	X	
11.	Excellent ability to work with internal and external partners as part of a team.	X	
12.	Experience working in multi-site collaborative research project.		X
13.	Ability to develop creative approaches to problem solving.	X	
14.	Ability to analyse and solve problems with an appreciation of longer-term implication.	X	
15.	Ability to work to deadlines and work accurately under pressure.	X	
16.	Ability to update and acquire new skills and knowledge in line with advances in the relevant subject area, including technical expertise and experience.	X	
17.	A flexible approach to work.	X	
18.	Experience of adapting own skills to new circumstances.	X	
19.	Ability to travel abroad for EU meetings and for testing technologies in the project case studies.		X

About the Team

The Department of Computer Science was established in 1982 and has since attained an international reputation for its research and teaching. In the 2014 Research Excellence Framework (REF) exercise, we were ranked 5th out of 89 departments in the UK for computer science research.

Our vision is to achieve research excellence and impact by translating fundamental knowledge into practice, through collaboration with end users. Much of our research spans the boundaries between engineering, medicine and the life sciences. Research in the Department is organised into the following groups:

- Machine learning
- Algorithms
- Complex systems modelling
- Natural language processing
- Speech and hearing
- Organisations, information and knowledge (OAK)
- Verification
- Testing
- Security of advanced systems
- Visual computing

There is substantial cross-group research activity in many areas, ensuring that research is multidisciplinary and collaborative. Our staff are actively engaged in a number of research centres and institutes, which focus on topics such as robotics (Sheffield Robotics), *in silico* medicine (Insigneo), assistive technology and connected healthcare (CATCH) and translational neuroscience and genomics (SITraN).

We attract substantial external funding from UK Research Councils, the European Union and industry. Our record for leadership in collaborative research is outstanding, particularly in European programmes. The Department is currently host to two ERC fellows and four EPSRC fellows.

The Department offers 3-year and 4-year undergraduate degrees in Computer Science, Software Engineering and Artificial Intelligence, and dual degrees with Mathematics and Physics. We have an enviable reputation for innovative teaching methods based on enterprise, industrial projects and problem-based learning. At Masters level we run programmes in Advanced Computer Science, Advanced Software Engineering, Software Systems and Internet Technology, and a specialised programme in Speech and Language Processing. A new MSc in Data Analytics was introduced in 2016 and we plan to introduce a MSc in Cybersecurity in 2018.

In 2016 we were recognised for our work on diversity and equality with a Silver Athena Swan award. More information on the Department of Computer Science can be found at www.shef.ac.uk/dcs.

The Organisation, Information and Knowledge Group conducts research and innovation in the area of large-scale data, information and knowledge acquisition, integration and sharing. The Group includes a senior academic, Professor Fabio Ciravegna, a Lecturer and several senior research scientists, Research Associates, Research Assistants and PhD students. The group has a full time project and opportunity manager. The Group is very successful in obtaining European and National funds, having secured around £8 million since 2006 of which 10% is from industrial projects. The Group has created two companies in the area of data management (K-Now Ltd) and telematics (The Flow). They are currently coordinating a large European project (SETA, on big data for mobility in large metropolitan areas, 3 years, value €5.5M, 13 partners), a project funded by Public Health England which is distributing our fitness apps to dozen of thousands of people and one industrial project (Football Whispers).

Job Description

Main Duties and Responsibilities

- Design, develop and maintain Android software of the highest quality to meet the project objectives of the global activity mentioned above in an efficient and effective manner.
- Design, implement and maintain server software written in Nodejs able to support large scale data input, processing and output.
- Design and implement software testing methodologies for the application (for example, using JUnit tests). Ensuring the security of data will be an important part of the test.
- Deliver the technology to dozens of thousands of real users via Google Play Store and other channels.
- Apply models and techniques related to health and wellbeing, while considering also similar domains.
- Compile and analyse quantitative and qualitative data, prepare reports and present results to summarise main findings and conclusions to partners and to external audience.
- Analyse and write up research results of tests and experiments undertaken into high quality documents.
- Support the project coordinator, Professor Ciravegna, in identifying new functionality and directions of research.
- Monitor results of the research.
- Any other duties, commensurate with the grade of the post.

Reward Package

Terms and conditions of employment: Will be those for Grade 7 staff.

Salary for this grade: £30,688 - £38,833 per annum.

This post is fixed-term until 31 January 2019

This post is full-time:

This role has been identified as a full-time post, but we are committed to exploring flexible working opportunities with our staff which benefit both the individual and the University (See www.sheffield.ac.uk/hr/guidance/flexible/arrangements). Therefore, we would consider flexible delivery of the role subject to meeting the business needs of the post. If you wish to explore flexible working opportunities in relation to this post, we encourage you to call or email the departmental contact listed below.



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To find out more visit www.sheffield.ac.uk/hr/thedeal

We are committed to making the University a remarkable place to work and we support this through a number of sector leading initiatives such as Juice and Sheffield Leader.

Our innovative Health and Wellbeing programme, Juice, promotes happiness and wellbeing through a broad range of inclusive activities. To find out more visit www.sheffield.ac.uk/juice

Our leadership development has been designed to ensure that our leaders have the knowledge, skills and behaviours needed by the University. To find out more visit www.sheffield.ac.uk/hr/sld/sheffieldleader

We are also proud of our award-winning equality and diversity action which enhances working life for all. 92% of staff tell us they are treated with fairness and respect (staff survey 2016) www.sheffield.ac.uk/hr/equality

We are the only university to feature in the Sunday Times 100 Best Not-for-Profit organisations to work for 2016. In our staff survey (2016) 94% of staff said they were proud to work for the University and 89% of our staff would recommend the University as an excellent place to work. To find out more about what it's like to work here visit remarkable.group.shef.ac.uk

Selection – Next Steps

Closing date: For details of the closing date please view this post on our web pages at www.sheffield.ac.uk/jobs

Following the closing date, we will contact you by email to let you know whether or not you have been shortlisted to participate in the next stage of the selection process. Please note that due to the large number of applications that we receive, it may take up to two working weeks following the closing date before the recruiting department will be able to contact you.

For more information on our application and recruitment processes visit www.sheffield.ac.uk/jobs/info

Informal enquiries

For informal enquiries about this job and the recruiting department, contact: Prof F. Ciravegna f.ciravegna@sheffield.ac.uk

For administration queries and details on the application process, contact the lead recruiter: Alice Tucker on com-recruiters@sheffield.ac.uk.

For all online application system queries and support, visit: www.sheffield.ac.uk/jobs/applying

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