Candidate Information

Position:	Research Software Engineer (Semantic Web APIs) - KTP Associate - BT
School/Department:	KTP and Business Networks
Reference:	21/108759
Closing Date:	Wednesday 12 May 2021
Salary:	£26,000 - £34,000 per annum. One of the key KTP benefits for graduates is access to a £8,500 training and travel budget over the 24 month project.
Anticipated Interview Date:	Thursday 27 May 2021
Duration:	24 months.

Job Purpose:

Design and build the next generation of development tools for service-oriented architectures based on semantic composition, which will enable machine-assisted identification and composition of web services. As part of the KTP you will also ensure its embedding within BT's development processes to improve efficiency, minimise cost and reduce time to market of new software features.

Main Activities and Responsibilities:

Queen's University Belfast and BT are looking to recruit a research software engineer as part of a Knowledge Transfer Partnership to develop the next generation of smart micro-services and service-oriented architecture development. BT increasingly develops systems as a service and this move towards the cloud makes it critical to easily discover and combine existing and new web-services both inside and outside the organisation. In this KTP project you will design and build the next generation of development tools for service-oriented architectures based on semantic composition, which will enable machine-assisted identification and composition of web services. As part of the KTP you will also ensure its embedding within BT's development processes to improve efficiency, minimise cost and reduce time to market of new software features.

BT is a British multinational telecommunications company with head offices in London. It operates in around 180 countries and is the largest provider of fixed-line, mobile and broadband services in the UK, and also provides subscription television and IT services. BT aims to achieve the goal of connecting a society that is evermore online through delivering a cutting edge network with software and services that help consumers get the most out of our offering. At the core of BT's strategy lies an ambitious research plan conducted in various BT research centres across the globe. Especially BT Ireland Innovation Centre (BTIIC) in Belfast heavily focusses on furthering BT's software capabilities, in particular in the field of artificial intelligence, data analytics and software engineering. Through the KTP programme we wish to recruit a skilled and motivated post-graduate to work in BT (based in Belfast, Northern Ireland) on a collaborative project with academics in the School of Electronics, Electrical Engineering and Computer Science at Queen's over 24 months.

The KTP Associate will lead on the delivery of the following key project stages:

1. Introduction to Micro-Services and Service Discovery
2. First Development Phase – Bottom-Up Realisation of Services Pipeline for Software Metrics Collection Framework
3. Second Development Phase – Realisation of General-Purpose Service Querying and Composition Framework
4. Trialling and Evaluation
5. Consolidation/Commercialisation

The KTP Associate will:

• Analyse and group software components deployed on endpoints with the industrial partner

• Define and implement an endpoint composition mechanism based on semantic composition research of the university partner

• Deploy and trail and evaluate the realised approach with target engineering teams

• Attend project meetings, report on progress and create opportunities for the tooling to be realised with the industrial partner.

• Collect data on usage and benefit, compile and analyse the data, and publish the results at international research venues.

Planning and Organising:

1. Manage and coordinate the items of work as laid out in the project plan (individual work plan will be provided by Supervisors).
2. Plan day-to-day activity within the framework of the agreed work plan.
3. Contribute to the planning and management of the project, approximately 3-6 months in advance.
4. Ensure that all training and development activity is scheduled to ensure that progress on the work plan objectives is not interrupted or delayed.

Resource Management and Responsibilities:
1. Plan and manage day-to-day resources to ensure the project runs to time and on budget.
2. Coordinate and obtain approval for planned expenditure/allocation of resources with the Management Committee and Steering Group.
3. Carry out supervision of placement students or other staff members as required.
4. Monitor travel and development budgets and produce a Personal Development Plan which will ensure best use of financial resources.
5. Attend training modules (mandatory and additional job-specific training). This may be local, national and international.
6. Perform any other additional duties as agreed by the Local Management Committee and Steering Groups to contribute to the development of the company, the university and the Associate.

Internal and External Relationships:
1. Present regular progress reports to members of the Steering and Management Groups and to external audiences.
2. Liaise with company staff on a daily basis. Contribute to training of staff in the company and university as required.
3. Build relationships with both company and university staff to ensure effective working practices are established.
4. Attend and contribute to any appropriate meetings, both in the company and the university as required.
5. Establish contacts with additional groups and organisations (other KTP Associates, other university departments, other industrial contacts, and Innovate UK) as required to develop knowledge and understanding and form relationships for future collaboration.
5. Act as an Ambassador for the Knowledge Transfer Partnership Scheme.

Additional Information:
1. Knowledge Transfer Partnerships help forward thinking companies innovate for growth. They do this by connecting organisations who have an innovative idea with the knowledge and expertise to help deliver it. This dynamic three-way partnership formed between an inspired graduate, the university and the company means that the graduate, known as the KTP Associate, provides the link between an expert academic team and a dynamic organisation. This bridge gives the graduate unique and exceptional access to both world class academic support and experts from within the business.
2. A KTP provides a fulfilling employment opportunity where you can apply your knowledge to turn a key strategic innovative idea into reality and although the KTP Programme is aimed at recent graduates, any suitable qualified graduate may apply. Each KTP Associate role is a fully salaried job and last between 12 months and three years with approximately 70% of Associates offered employment by the host business at the end of the project. Projects can be in any sector and for businesses of all sizes. Each KTP Associate will have a travel / training budget to provide funding for job-specific training and further professional development. Two, one week residential management training modules are also included as part of the package.
3. For all KTP projects, the graduate is employed by the University but contracted to work in the business, under the business' basic terms and conditions including holidays and hours of work. As a member of University staff, KTP Associates can join the University pension scheme, gain access to University resources including the Library and sports facilities.
4. KTP aims to help businesses improve their competiveness and productivity through the better use of knowledge, technology and skills held within the UK knowledge base. KTPs are funded by UKRI through Innovate UK with the support of co-funders, including the Scottish Funding Council, Welsh Government, Invest Northern Ireland, Defra and BEIS. Innovate UK manages the KTP Programme and facilitates its delivery through a range of partners including the Knowledge Transfer Network (KTN), Knowledge Bases (in this case, Queen's University Belfast) and Businesses.
More details about are available at www.ktp-uk.org

Essential Criteria:
** Please note that the Shortlisting Panel cannot make assumptions on your experience or qualifications; it is the responsibility of the applicant to evidence their suitability for the role. As such your Application Form, CV and/or Cover Letter must clearly demonstrate how your Qualifications and Experience meet the Essential Criteria and, where possible, Desirable Criteria as listed in the Candidate Information Booklet.

1. * Hold, or be about to obtain in July 2021, a Masters degree or higher (with at least a 2.1/Commendation or equivalent classification) in Computer Science or Software Engineering or a closely related discipline. Candidates must clearly state their qualifications and grade/predicted grade when making their application.
2. * At least 9 months' relevant work or research experience (which can be gained through a work placement).
3. * Completion of a substantial software engineering project in either university or industry.
4. * Demonstrable proficiency in service-oriented software development such as RESTful APIs.
5. * Demonstrable proficiency in agile software development and related tools such as Git and automated testing.
6. Good oral, written and presentation skills.
7. Ability to think logically, create solutions and make informed decisions.
8. A high level of numeracy and the ability to interpret data.
9. High level of IT skills.
10. Ability to programmatically solve challenging problems.
11. Ability to work effectively as a member of a group.
12. Well organised, attention to detail and ability to meet tight deadlines.
13. An interest in staying with the Company. (Associates are normally invited to apply for permanent positions).
14. Ability to take part in Associate management courses (requiring two one-week periods in England).
15. Willing/able to travel throughout the UK and Ireland and abroad, as necessary.

Desirable Criteria:
1. * Hold, or be about to obtain, a PhD in a closely related area.
2. * More than 1 year's relevant work or research experience.
3. * Demonstrable experience with technologies such as SpringBoot, Flask, Open API/Swagger.
4. * Demonstrable experience in any of the following: developing information retrieval/artificial intelligence/search-based optimization algorithms.
5. * Experience of academia-industry linked collaborative research/technology transfer from academia to industry.
6. * Experience of Project Management.
7. * Experience in managing project stakeholders at a variety of grades and seniority levels.
8. * Demonstrable experience of writing research articles suitable for publication with publication record commensurate with stage of career.
9. * Demonstrable knowledge in any of the following: developing information retrieval/artificial intelligence/search-based optimization algorithms (which can be gained through completion of a module, student project or work placement).
10. Ability to deliver training and follow-up support to operatives.
11. Commercial ability to understanding the business case principals around relevant innovations and the real value to business through value proposition build.
12. Ability to influence people effectively.
13. Tenacious and committed to achieving goals.