Job Related Information

This document includes information about the role for which you are applying and the information you will need to provide with your application.

1. Role Details

Vacancy reference	14474
Job title:	Research Assistant / Associate for Mainstreaming Learning Analytics
Reports to:	Professor of Computer Science
Salary:	Ranging from £29,799 to £38,833
Terms and conditions:	Full time Research Staff
Grade	AC1 / AC2
Duration of post:	Temporary contract until March 2021
Working hours:	Full time, Monday to Friday
Location:	Milton Keynes
Closing date:	12 noon, Thursday 29 March 2018
Type of application form accepted:	Short version (with CV plus covering letter)
Number of referees required:	Three
Unit recruitment contact:	Ortenz Rose

2. Summary of duties

The Institute of Coding (IoC) www.instituteofcoding.org is a new, exciting, national initiative, led by the University of Bath, supported by theme leaders Aston University, Coventry University, the Open University and Queen Mary University of London. The Institute brings together a range of universities, industry, training providers and professional bodies to address the UK's digital skills gaps.

The Institute's vision is to enhance the education and employability of every IoC learner, and ensure that employers and individuals across the UK can access the skills they need to compete in the global digital economy. This unique and innovative collaboration has been made possible with £20m from the Higher Education Funding Council for England and match funding from universities and industry partners.

The Institute of Coding will develop and deliver innovative, industry-focused higher education across the UK. It will develop accredited degree schemes and short courses aimed at professionals in a wide range of sectors, as well as working to widen the participation of women, returners to work and hard to reach groups.

The Open University leads the IoC's first theme on university learning, which aims to influence computer science teaching in universities nationally. An important part of that theme will be to mainstream data analytics within IoC partners to enhance teaching and improve educational outcomes. In addition, it will leverage cutting-edge machine learning technologies to offer advice on skill acquisition in a manner that is personalized to each individual student and their aspirations.

This IoC data analytics work will build on the experience of the OU Analyse project (http://analyse.kmi.open.ac.uk) which aims to increase the student retention rate at the Open University and at the same time to improve the quality of education. Internet technologies enable universities to offer their students educational resources online and, at the same time to collect information about the use of these resources. By analysing students' interactions with the virtual learning environment, it is possible to identify those who might be at risk of failing the course and offer them well-targeted additional support.

Our predictive models use data from the virtual learning environment, student performance during the course, legacy information, and the rules of the course to predict at-risk students as early as possible during a presentation. The analysis aims at identifying students for whom the additional support may help. By applying machine learning algorithms we have predictive models that identify patterns of behaviour typical for potential failure in the course.

We are currently looking for a Research Assistant or a Research Associate to work on how we can adapt, deploy and mainstream our learning analytics tool across a number of educational establishments nationally.

The appointment will be made on the Academic Grade AC1 or AC2 salary scales depending on qualifications and experience.

JOB DESCRIPTION

You will be part of a team of developers and researchers working on focused interventions across the IoC partners. In particular you will deploy analytics at a number of IoC sites recording against specific dimensions and metrics including: Retention and progression, Effectiveness of data - measure of the utility of the different data type, Ease of deployment - we will capture any issues, technical and non-technical, associated with data

analytics deployment. This metric will aid us as data analytics is rolled out more broadly within the IoC, Effectiveness of intervention strategy and Required customisations for IoC education.

Your work will involve:

- travel to meetings with IoC partners;
- collaboratively designing Data mining experiments;
- gathering data and developing prototypes;
- developing software for communication with users;
- training and testing (machine learning) models;
- conducting and analysing experimental data;
- moving prototypes into a production environment.

3. Person specification

Requirements   (E = Essential/ D = Desirable)

Education, qualifications and training

(E) A Master in Computer Science or related field, or equivalent experience.

(E) Appointment as a Research Associate requires a PhD in Computer Science or related field or 2+ years equivalent in quality of achievement.

Knowledge, work and other relevant experience

Essential:	• Experience in programming Java/C++/R/Python (or any other object oriented language); • Experience with designing and implementing of web applications, ability to write a prototype of a solution; • Knowledge of SQL both for designing the databases and writing optimized and complex queries; • Ability to independently and proactively define solvable solutions to problems; • Deploy and maintain the solution in the production environment; • Ability to work in a team, contribute to code review, knowledge of working with a versioning system (e.g. GIT); • Proven ability to fit into the OU's Computer Science REF profile (depending on level and experience: publications, supporting income generation and non-academic impact).
Desirable:	• Knowledge of principles of machine learning, data mining and statistics; • Experience with designing Data Warehouses and ETL process; • Knowledge of Java server technology; • Experience with unit-testing.

Personal abilities and qualities	
Essential:	• Ability to quickly demonstrate understanding of the project aims and specific tasks as requested; • Ability to write technical reports and contribute to research papers; • Ability to pro-actively seek solutions to complex problems; • Fluency in English; • Team player; • Hard worker; • Ability to work to challenging targets.
Desirable:	n/a

4. Role specific requirements e.g. Shift working

n/a

5. About the unit/department

Faculty of Science, Technology, Engineering & Mathematics
The Faculty of Science, Technology, Engineering and Mathematics (STEM) is comprised:

• School of Computing & Communications
• School of Environment, Earth & Ecosystem Sciences
• School of Engineering & Innovation
• School of Life, Health & Chemical Sciences
• School of Mathematics & Statistics
• School of Physical Sciences
• Knowledge Media Institute (distinct research institute)
• Deanery including teams supporting Curriculum, Research and Enterprise, Laboratory Infrastructure and Faculty Administration

"We aspire to be world leaders in inclusive, innovative and high impact STEM teaching and research, equipping learners, employers and society with the capabilities to meet tomorrow's challenges"

The Faculty of STEM consists of 700 staff and 1,800 Associate Lecturers. The Faculty delivers over 185 modules across undergraduate and postgraduate curriculum, supporting nearly 19,000 students (full time equivalents) which is 29% of the OU total.

The Faculty generates more research income (circa £17M) than any other Faculty in the University, supported by a comprehensive laboratory infrastructure.

We are proud of our distinctive values and capabilities underpinning our aspiration:

We are inclusive:
• We transform people's lives, ensuring STEM education is openly accessible to many thousands of students from diverse backgrounds – our students express high satisfaction with their study experience

- We engage the public in exciting citizen science and engineering, including through free open educational resources, multi-platform broadcasting, outreach to inspire the next generation and with programmes to encourage more women into STEM

We are highly innovative:
- We are at the forefront of innovative developments in teaching practical science and engineering at a distance, through simulated and remote access laboratories and practical experimentation
- Our high quality teaching and curriculum are informed by world-leading research, strong links with professional bodies and communities of practitioners, as well as by scholarship focused on continuously improving our STEM pedagogy

We deliver significant social and economic impact:
- We provide STEM higher education at a scale and reach unsurpassed in the UK, with a sizeable international reach and further growth potential
- We inject transferable STEM skills and knowledge direct into the workplace for immediate employee and employer benefit, as students combine study while working
- The employability value of our courses is underpinned by accreditation from leading STEM Professional Bodies and Learned Societies, as well as partnerships and sponsorship with leading employers
- Our high quality, applied and academically relevant teaching and research addresses real-world issues, delivering impact for industry and society, including addressing pressing STEM skill-shortages across the UK.

The Knowledge Media Institute (KMi) of the UK's Open University is a highly successful interdisciplinary research centre founded at The Open University in 1995, and located in attractive premises at The Open University's main campus in Milton Keynes, UK. We offer a stimulating environment, widely acknowledged to be at the leading edge of research and development, particularly in Semantic Technologies, Human Computer Interaction, New Media and Information Retrieval. The style, impact and content of our work can be seen at http://kmi.open.ac.uk/

"Our lab values diversity and is committed to equality of opportunity. We would particularly welcome applications from women, since women are, and have historically been, underrepresented on our academic staff."

6. How to obtain more information about the role or application process

If you would like to discuss the particulars of this role before making an application please contact Professor John Domingue on +44 (0)1908 653800 or email: john.domingue@open.ac.uk

If you have any questions regarding the application process please contact Ortenz Rose on +44 (0)1908 654774 or email: kmi-recruitment@open.ac.uk

7. The application process and where to send completed applications

Your application should contain:	a) A completed short application for employment form; b) An up-to-date CV; c) Covering letter detailing how your skills and experience make you a suitable candidate for the post. Please ensure you complete all relevant sections of the application form. **Applications received without a covering lette**r **will not** be accepted.

Please ensure that your application reaches the University by:	12:00 noon, Thursday 29 March 2018
E-mail your application to:	kmi-recruitment@open.ac.uk
Or post it to Name/Job title:	Ortenz Rose / KMi Senior Co-ordinator – Staffing & Recruitment
Department/Unit:	Knowledge Media Institute (STEM)
Address:	The Open University, Berrill Building, Walton Hall, MILTON KEYNES. Bucks MK7 6AA

8. Selection process and date of interview

The interview panel will be chaired by:	Professor John Domingue
The other members of the interview panel will be:	Martin Hlosta Dr Paul Mulholland Professor Zdenek Zdrahal
The interviews will take place on:	To be advised
The selection process for this post will include:	• A review of applications by the interview panel; • A formal interview.

We will let you know as soon as possible after the closing date whether you have been shortlisted for interview. Further details on the selection process will also be sent to shortlisted candidates.

Applications received after the closing date will not be accepted.