

Further Particulars

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

1. Role details

Vacancy reference:	11038
Job title:	Research Assistant / Associate – Data Science
Reports to:	Professor of Computer Science
Salary:	Ranging from £28,695 – £37,394
Terms and conditions of service:	Full time Research Staff
Grade:	AC1 / AC2
Duration of post:	24 months as of 1 st April 2015
Working hours:	37 hours per week (full time Monday to Friday)
Location:	Knowledge Media Institute of The Open University
Closing date:	4 th March 2015
Type of application form accepted:	Standard / long version (plus covering letter)
Number of referees required:	Three
Unit recruitment contact:	kmi-recruitment@open.ac.uk

2. Summary of duties

Declared by Harvard Business Review as the “sexiest job of the 21st century”,¹ data science skills are becoming a key asset in any organization confronted with the daunting challenge of making sense of information that comes in varieties and volumes never encountered before. The title has been around for a while now, and is typically linked to a number of core areas of expertise, from the ability to operate high-performance computing clusters and cloud-based infrastructures, to the know-how that is required to devise and apply sophisticated Big Data analytics techniques, and the creativity involved in designing powerful visualizations.²

Surviving in the data economy depends on hiring data professionals who master both the technical and non-technical facets of data science, from Big Data technology and data-driven storytelling, to new data monetization and innovation models. The challenge for managers is thus to identify and prioritize their knowledge gaps in this rapidly evolving, and to some extent interdisciplinary field,³ secure new data science talent, and train their existing staff into becoming proficient data practitioners and entrepreneurs.

Data scientists are, however, still a rare breed. Beyond the occasional data-centric startup and the data analytics department of large corporations, the skills scarcity is already becoming a threat for many companies and public sector organizations as they struggle to seize Big Data opportunities in a globalized world. A well-known McKinsey study⁴ estimated already in 2011 that the United States will soon require 60 percent more graduates able to handle large amounts of data as part of their daily jobs. The number of job descriptions and an increasing demand in higher-education programs and professional training confirm this trend,⁵ with some EU countries forecasting an increase of almost 100 percent in the demand for data science positions in less than a decade.⁶

The new EU funded project the **European Data Science Academy** (EDSA) will deliver the learning tools that are crucially needed in order to close this problematic skills gap. Comprised of a consortium of academic and industry institutions with an excellent track record in professional training in Big Data, open data, and business development; and with strong ties to a wide range of stakeholders in the global data economy, EDSA will implement a cross-platform, multilingual data science curricula which will play a major role in the development of the next generation of European data practitioners. To meet this ambitious goal, the project will constantly monitor trends and developments in the European industrial landscape and worldwide, and deliver learning resources and professional training that meets the present and future demands of data value chain actors across countries and vertical sectors. More specifically, the project mission translates into the following objectives:

1. **Demand analysis:** leveraging a vast and diverse network of thousands of data providers, consumers and intermediaries across Europe, we will track the pulse of the European data economy in order to ensure that our curricula are fully in sync with the demands of our customers. Through interviews of focused groups, strategic guidance of a strong and committed industry advisory board, and trend mining tools scrutinizing thousands of job descriptions and technology blogs, we will gain a thorough understanding of the present and future learning requirements of different types of stakeholders and business domains, and use these insights to optimize our training offerings.

¹ <http://hbr.org/2012/10/data-scientist-the-sexiest-job-of-the-21st-century>

² <http://www.oreilly.com/data/free/stratasurvey.csp>

³ http://en.wikipedia.org/wiki/Data_science

⁴ http://www.mckinsey.com/insights/business_technology/big_data_the_next_frontier_for_innovation

⁵ <http://www.computerweekly.com/news/2240208220/Government-calls-for-more-data-scientists-in-the-UK>

⁶ <http://www.computerweekly.com/news/2240174273/Demand-for-big-data-IT-workers-to-double-by-2017-says-eSkills>

2. **Data science curricula:** high-quality, multilingual and multimodal training materials (eBooks, slides, video lectures, online demonstrators and showcases, data sets, online courses) that will be usable on different platforms. Our materials will capitalize on the rich portfolio of learning resources and expertise available for public use and on the data science expertise in the consortium. The resources will be licensed as Creative Commons 4.0 (CC BY 4.0) in order to reach the greatest impact in public and commercial contexts. Our curricula will integrate these resources into a coherent agile framework for self-study and tutor-led training as well as adaptation and customisation, using offline and online training delivery tools and highly visible promotion channels such as iTunes U.
3. **Training delivery and learning analytics:** Fully in line with our mission to educate the next generation of European data scientists, we will deliver key parts of our curricula as webinars, video lectures and face-to-face training, offered regularly as part of the EDSA training series, or responding to a growing number of queries from our large network of customers and collaborators. Through EDSA these programs will be integrated, translated into different European languages, and expanded to meet the sector-specific needs of new audiences. To maximize outreach we will make use of some of the most popular training delivery platforms worldwide, including VideoLectures.NET and iTunes U. Our training concept puts engagement with learners and Big Data stakeholders at its core. Through a variety of platforms we will have access to powerful educational data mining mechanisms that will complement a comprehensive stakeholder engagement strategy covering an advisory board, a continuous skills gap analysis on focus groups, and state-of-the-art dissemination and communication activities via LinkedIn and social media.

We are currently looking for a Research Assistant or a Research Associate (depending on qualification) to work on this project.

The appointment will be made on the Academic Grade 1 or 2 Salary Scales for Research Staff, ranging from £28,695 – £37,394 pa depending on qualifications and experience. Appointment as a Research Associate requires a PhD or three years equivalent in quality of achievement.

Job Description

Within EDSA the research team at the OU will develop multimedia interactive and semantically linked open learning resources, including eBooks in response to the skills gaps found by our European level demand analysis. Also we will apply learning analytics during training delivery to understand what our learners are doing and to enhance their learning experience. Successful applicants will be expected to collaborate with our EDSA partners in producing their outputs. Ideally candidates should have knowledge of data science related and eLearning research areas.

We expect successful applicants to fit into our Computer Science REF profile depending on previous experience. The REF is a UK research assessment exercise whereby research departments are evaluated for their research contribution through their publications, income generation and non-academic impact.

You will be working as part of a team of dynamic researchers in the field of knowledge and eLearning technologies, Semantic Web, Web services within KMi, and in the context of a European project consortium. There will be the opportunity to develop your research profile, to travel to give demos and presentations, and to write academic papers.

Relevant Publications and Further Information

All the publications below are available from <http://kmi.open.ac.uk/publications/>

Domingue, J., d'Aquin, M., Simperl, E. and Mikroyannidis, A. (2014) The Web of Data: Bridging the Skills Gap, IEEE Intelligent Systems, 29, 1, pp. 70-74

Marquez-Barja, J., Jourjon, G., Mikroyannidis, A., Tranoris, C., Domingue, J. and DaSilva, L. (2014) FORGE: Enhancing elearning and research in ICT through remote experimentation,

IEEE Global Engineering Education Conference (EDUCON), Istanbul, Turkey, IEEE Education Society Publications

Mikroyannidis, A., Domingue, J., Maleshkova, M., Norton, B. and Simperl, E. (2014) Developing a Curriculum of Open Educational Resources for Linked Data, 10th annual OpenCourseWare Consortium Global Conference (OCWC), Ljubljana, Slovenia

Mikroyannidis, A. and Domingue, J. (2013) Interactive learning resources and linked data for online scientific experimentation. World-Wide-Web Conference, Rio de Janeiro, Brazil (Companion Volume) 2013: 431-434 <http://www2013.org/companion/p431.pdf>

Yu, H.Q., Pedrinaci, C., Dietze, S. and Domingue, J. (2012) Using Linked Data to Annotate and Search Educational Video Resources for Supporting Distance Learning, IEEE Transactions on Learning Technology, IEEE computer Society Digital Library.

Useful URLs

European Data Science Academy - <http://edsa-project.eu/>

Euclid a recently finished project which is creating open educational resources based on eBooks for Linked Data - <http://www.euclid-project.eu/>

Linked Universities - <http://linkeduniversities.org/lu/>

LinkedUp project - <http://linkedup-project.eu/>

DiscOU - <http://discou.info/>

SocialLearn – <http://sociallearn.open.ac.uk/>

FutureLearn - <http://www.futurelearn.com/>

3. Person specification

Essential Skills

- Strong software and Web development skills;
- Familiarity with existing Semantic Web standards and technologies, e.g. RDF(S), OWL, SPARQL;
- Familiarity with Social Media platforms;
- Familiarity with eBook formats, such as Apple iBooks and ePUB;
- Experience in eLearning technologies and pedagogy;
- Experience in technologies associated with Learning Analytics;
- 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);
- Ability to quickly demonstrate understanding of the project aims and specific tasks as requested;
- Self-starter in providing solutions to meet project needs;
- Ability to work in complex team relationships;
- Excellent written and oral communication skills;
- Work to challenging targets and deadlines;
- Ability to handle constructive feedback.

Desirable Skills

- PhD in Computer Science or a related field, or 2+ years of Research & Development experience in IT;
- Experience with Java and JavaScript;
- Experience in the design and implementation of practical Semantic Web-based or ontology-driven applications;
- Experience in the design and implementation of Web services and/or RESTful services;
- Experience working in (higher) education.

4. Role specific requirements e.g. Shift working

n/a

5. About the unit/department

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/>

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 Tel: +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 ortenz.rose@open.ac.uk

7. The application process and where to send completed applications

Please ensure that your application reaches the University by: **4th March 2015**

Post it to:

Name/Job title: **Ortenz Rose – Senior Staffing Coordinator**

Department/Unit: **Knowledge Media Institute**

Address: **The Open University
Walton Hall
MILTON KEYNES
Bucks**

Post Code: **MK7 6AA**

Or e-mail your application to: kmi-recruitment@open.ac.uk

8. Selection process and date of interview

The interview panel will be chaired by Professor John Domingue. Other members of the interview panel will include members of the project team and KMi. The interviews will take place as soon as possible after the closing date.

The selection process for this post will be by review of applications by the Chair and selected members of the interview panel. There may be a telephone interview before a formal interview.

- a) Please ensure you complete all relevant sections of the application form. You are welcome to enclose a curriculum vitae, however **CVs will not be accepted on their own.**
- b) You are also asked to provide a covering letter describing how your skills make you a suitable candidate for the post.

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 be sent to shortlisted candidates.

Applications received after the closing date will not be accepted!