

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:	8761
Job title:	Research Assistant / Associate
Reports to:	Professor of Computer Science
Salary:	Ranging from £27,854 – £36,298
Terms and conditions of service:	Full time Research Staff
Grade:	AC1 / AC2
Duration of post:	1 st May 2013 – 31 st May 2014
Working hours:	Full time – 37 hours per week
Location:	Knowledge Media Institute of The Open University
Closing date:	7 th March 2013
Type of application form accepted:	Standard form
Number of referees required:	Three
Unit recruitment contact:	Ortenz Rose

2. Summary of duties

Linked Open Data has proven to be a very successful vehicle promoting the sharing and use of data via the Web. The number of major players either directly using Linked Data technology or their own variants is impressive (Google, Yahoo, BBC, US & UK Governments, Microsoft, Facebook). Less clear is how one can build applications on top of this ever-growing data in a well-engineered, maintainable and re-usable fashion. Over the last few years the Open University's Knowledge Media Institute (KMi) has been investigating how to integrate service technologies – including the WSDL based stack and Web APIs or REST services – with Linked Open Data. We use the term Linked Services to cover the general area that we are investigating.

We have a number of EU funded projects where we carry out research on this topic and also how we can apply Linked Services in a number of domains. Within the VPH Share project we are applying our work in the context of sharing human body processes at scale with the ambitious goal of creating patient avatars based on a combination of patient specific data and generic human body process models. Within COMPOSE we are investigating how we might create a marketplace combining services and physical goods using sensors and mobile devices following the Internet of Things vision.

We are currently looking for a Research Assistant or a Research Associate (depending on qualification) to work on one of these projects (VPH Share or COMPOSE).

The appointments will be made on the Academic Grade 1 or 2 Salary Scales for Research Staff, ranging from £27,854 – £36,298 pa depending on qualifications and experience. Appointment as a Research Associate requires a PhD or three years equivalent in quality of achievement.

Job Description

The research to be carried out will aim at extending our Linked Services infrastructure and tooling including the results from the EU SOA4All project, including: WSMO-Lite, hRESTS, iServe, SWEET and the SOA4All Studio. The overall objective is to empower users to create advanced applications by combining the wealth of Linked Data existing on the Web and within organisations, together with added-value services and processes that leverage this data.

The ultimate goal of COMPOSE is to create an ecosystem for exploiting the Internet of Things via its transformation into an Internet of Services where data from Web sites, sensors, and smart processing engines can easily be combined to support the development of intelligent dynamic applications. KMi's research in COMPOSE will focus on two main aspects. Firstly, we shall develop new service mining solutions able to automatically profile services and sensors in order to figure out the quality of the data they provide, their contextual sensitivity, or their resemblance in functionality or potential use to other services. Secondly, we shall exploit this derived information to devise new algorithms for dynamic service discovery and (re)composition able to adapt existing applications to changes in the availability of data provisioning services or the quality of data provided.

Within VPH Share, the objective is to develop a fully-fledged facility for exposing, sharing, combining, processing, and analysing large quantities of clinical data. The project focuses on providing a convenient interface allowing practitioners to access, manipulate and exploit the wealth of data from research infrastructures and clinical processes. Therein, our existing technologies like iServe and SWEET will be exploited to support the annotation and advanced discovery of clinical analysis services. Additionally, we shall focus on supporting the creation and sharing of workflows that combine these services to analyse the wealth of data at hand.

You would be contributing to KMi's Linked Services software infrastructure and tooling. You should thus have strong software development skills for the development of Web-based applications and prior experience in developing applications using Semantic Web

technologies, Web services, RESTful services and Web APIs. Knowledge of Semantic Web and Semantic Web Services technologies and previous experience on developing applications based on workflow engines or rule engines will also be highly desirable.

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 technologies, Semantic Web and 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://people.kmi.open.ac.uk/carlos/> or from <http://people.kmi.open.ac.uk/domingue/> under Publications.

1. Ly, A., Pedrinaci, C. and Domingue, J. (2012) Automated Information Extraction from Web APIs Documentation, The 13th International Conference on Web Information System Engineering (WISE 2012), Paphos, Cyprus, Springer
2. Lin, C., He, Y., Pedrinaci, C. and Domingue, J. (2012) Feature LDA: a Supervised Topic Model for Automatic Detection of Web API Documentations from the Web, The 11th International Semantic Web Conference (ISWC), Boston, USA
3. Pedrinaci, C., Liu, D., Lin, C. and Domingue, J. (2012) Harnessing the Crowds for Automating the Identification of Web APIs, Workshop: Intelligent Web Services Meet Social Computing at AAAI Spring Symposium 2012, Stanford, California
4. Kopecky, J., Vitvar, T., Pedrinaci, C. and Maleshkova, M. (2011) RESTful Services with Lightweight Machine-readable Descriptions and Semantic Annotations, in eds. Erik Wilde, Cesare Pautasso, REST: From Research to Practice, Springer
5. Pedrinaci, C. and Domingue, J. (2010) Toward the Next Wave of Services: Linked Services for the Web of Data, Journal of Universal Computer Science
6. Maleshkova, M., Pedrinaci, C., Domingue, J., Alvaro, G. and Martinez, I. (2010) Using Semantics for Automating the Authentication of Web APIs, International Semantic Web Conference (ISWC), Shanghai, China.

Useful URLs

COMPOSE - <http://www.compose-project.eu/>

iServe - <http://iserve.kmi.open.ac.uk/>

VPH Share @ KMi - <http://projects.kmi.open.ac.uk/vph-share/>

VPH Share - <http://www.vph-share.eu/>

3. Person specification

Essential Skills

- PhD in Computer Science or a related field, or 2+ years of Research & Development experience in IT;
- Strong software and Web development skills;
- Familiarity with existing Semantic Web standards and technologies, e.g. RDF(S), OWL, SPARQL;
- 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

- 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 with Natural Language Processing techniques and frameworks (e.g., GATE);
- Experience with Machine Learning or Data Mining techniques and frameworks;
- Experience with statistical analysis and related software (e.g., R);
- Experience with Hadoop and analysing large-scale datasets;
- Experience with rule engines;
- Experience with process languages and engines (e.g., BPEL, Taverna);
- Experience in developing mobile applications;
- 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 655014 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: **7 March 2013**

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. Interviews will be arranged as soon after the close date as is possible.

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

We will accept applications by no later than Monday 11th March 2013 after the closing date!