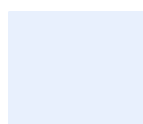
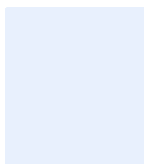


Appointment details
**KTP Associate – Computing
Science**

Job Ref: R170445

Closing Date: 23.59 hours GMT on
Wednesday 8 November 2017

EXCELLENT
DIFFERENT
DISTINCTIVE
ASTON



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- ▶ About Aston University

Founded in 1895 and a University since 1966, Aston is a long established research-led University known for its world-class teaching quality and strong links to business and the professions. Professor Alec Cameron became Vice Chancellor of the University in 2016, building on a strong legacy left by the Baroness Brown of Cambridge.

Outstanding graduate employability

Aston has been a leading university for graduate employment success for over 25 years. More than 80% of Aston graduates go on to a graduate level job within six months. The majority of Aston students choose to take an integrated placement year or year abroad, making them very attractive to employers. We have strong relationships with national and international graduate employers, as well as smaller and local employers. These relationships are extremely important and make a real contribution to graduate employability.

Career focussed programmes

Aston's close and established links with business, the public sector and the professions ensure that our career focussed degree programmes are inspiring, challenging and constantly updated to equip students with essential work-related skills and experiences.

Excellence in teaching and research

We are committed to high quality teaching and academic excellence, ensuring we provide the highest standard of education to our students. Aston has an excellent reputation for research which shapes and improves lives. We're proud of the quality of our research and the real world applications developed as a result – it makes a substantial and beneficial difference to people, organisations and society.

Aston's four academic Schools offer a range of undergraduate and postgraduate degree programmes, and also work with the public and private sectors to develop tailored Foundation Degree programmes.

International

Aston University is a popular choice for international students. We recognise and welcome the important academic contribution and cultural diversity international students bring to our university environment. Students from over 120 countries study at Aston University each year

Aston University is ranked 29th in the world and 9th in the UK as one of the 'most international universities in the world.' (The Times Higher World University Ranking, 2016-17).

Birmingham – one of Europe's liveliest cities

Birmingham is internationally recognised as a leader in leisure, entertainment, shopping and sport. It is an international centre for business, commerce and industry, housing numerous UK and overseas banks and law firms. Birmingham attracts 25 million visitors each year and contributes billions to the national economy through manufacturing and engineering.

The University campus is located in the city centre making it very accessible to an extensive network of motorways and railways.

A green, sustainable campus

Located in the heart of a vibrant city, our 40 acre campus houses all the University's academic, social and accommodation facilities for our 14,355 students. All staff have the opportunity to contribute to our sustainability agenda and practices.

Welcome from Professor Ian Nabney

Dear applicant

I am delighted that you are considering applying for this position at what is a particularly exciting time for Aston University, and in particular for the School of Engineering and Applied Science.

The School's tradition of quality and innovative teaching, and its reputation for cutting edge research that is relevant to industry, business and society, offers our staff and students excellent opportunities to join in the process of discovery and creativity, and prepare for an increasingly diverse and technological world.

Our scientists and engineers work together with a variety of other professionals in their quest to find solutions to complex problems. Our research income has grown dramatically in recent years, now averaging over £9M / year and still growing. A particularly important development is our continued establishment of focused Research Institutes, enabling us to consolidate our reputation for high-quality and high-impact research. Adding to already established Institutes in the fields of Photonics and Bioenergy, we now have focused groups working on Systems Analytics, Logistics, and Materials.

Teaching innovation and quality are a vitally important focus. In the School of Engineering and Applied Science we are inspired by the challenges of providing a vibrant, fulfilling and effective student experience, and this is reflected in our attention to teaching innovation; we are particularly proud of our innovation in introducing "active engineering" across our curriculum. We encourage our students to learn by doing – e.g., in multidisciplinary project groups. In 2016, we established the Aston STEM Education Centre to act as the focal point for our Engineering and Applied Science education research. The Centre's work aims to impact the complete student learning journey - from seeking to enhance the STEM education of 5 year olds, through to leading projects aimed at improving the learning experiences of university students.

It is a very exciting time to be a part of Aston and I look forward to receiving your application and learning more about how you would contribute the schools continuing success.



Professor Ian T Nabney
Executive Dean, School of Engineering and Applied Science

► University values

All staff are expected to demonstrate / promote the University's values and expectations, which are an integral part of our 2020 strategy and underpin the culture of the University. Our vision is to be the UK's leading University for business and professions, where original research, enterprise and inspiring teaching deliver global impact. More information about the university's values is available at www.aston.ac.uk/staff/working/dare-to-succeed/values/

In addition, our leaders are expected to be accountable, help to execute strategic visions of the University, share and set clear expectations that inspire those around them. Further information on our leadership expectations can be found at: <http://www.aston.ac.uk/EasySiteWeb/GatewayLink.aspx?allId=158042>



► Staff expectations

All staff are expected to;

- ▶ Be committed to delivering high performance
- ▶ Recognise and praise the high performance of others
- ▶ Remain open to new ideas and seek to act quickly for positive change
- ▶ Develop themselves, and support the development of others
- ▶ Be ambitious, for themselves, their teams and the university
- ▶ Engage with others, listen, observe and communicate
- ▶ Focus on excellent customer service, finding solutions and saying “yes”
- ▶ Make reasoned decisions without fear of blame
- ▶ Engender trust through their own actions
- ▶ Be fair in all matters

► The School of Engineering and Applied Science

The School of Engineering and Applied Science was formed in 1998 as part of a University-wide academic reorganisation from a departmental and faculty structure to a School structure. The internal structure of SEAS is set up as a matrix, which is intended to encourage collaborative research and the formation of teaching links between previously unrelated areas. A member of staff may therefore choose to join a research group whose composition is markedly different from that of the Subject Group through which other professional activities are arranged.

SEAS is led by the appointed Executive Dean, Professor Ian Nabney. The Executive Dean is supported by a Deputy Dean (Dr Trevor Oliver) and four appointed Associate Deans with the following areas of overall responsibility:

- ▶ Learning and Teaching: Professor Robin Clark
- ▶ Student Experience: Dr Sukhvinder Phull
- ▶ Research: Professor David Webb
- ▶ Enterprise: Dr Kate Sugden

Underpinning this structure are six Subject Groups, with considerable discipline-specific responsibilities, each with a Subject Group Head, as listed below:

Chemical Engineering and Applied Chemistry (CEAC)

- Professor Brian Tighe

Computer Science (CS)

- Dr Aniko Ekart

Electrical, Electronic and Power Engineering (EEPE)

- Professor Lin Zhang

Engineering Systems and Management (ESM)

- Professor Ed Sweeney

Mathematics (Maths)

- Professor David Saad

Mechanical Engineering and Design (MED)

- Dr Gareth Thomson

Each Subject Group has devolved responsibility for the design, delivery and operation of particular programmes through the Programme Management Committees. The bodies report through three key committees - Management Committee, Teaching Committee and Research Committee, ensuring that the individual disciplines are sustained and developed within the single integrated structure of the School.

Research

The School of Engineering and Applied Science specialises in research that addresses future societal needs: sustainability, bio-energy, knowledge engineering, complex systems studies, superfast high bandwidth communications and assistive technologies in biomedicine. We want to address basic questions with high human impact:

- How can we simulate model, predict and control uncertain complex systems with partial knowledge?
- How do we engineer superior optically based communication and sensing technologies?
- How can we apply chemistry to construct materials and products for use in biotechnology, nanotechnology and medicine?
- How can we harness biosciences as a source of renewable energy and raw materials for industry? How can we create a more sustainable future?
- How can we engineer improved health systems and technologies?

From new hardware technologies to developments in algorithms for smart data processing, our Engineering research is at the core of modern society developments. Photonics research focuses on ultrafast optical transmission and processing in fibre designed optic components. Flexible and powerful principles of fibre optic sensing are also being used to detect physical and chemical properties of living cells. Synthetic chemistry is being utilised to construct novel 'designer' materials that interact with biological molecules, cells and more complex biological systems. Biomedical engineering research is investigating smart systems for monitoring and diagnosis. Sophisticated cross-disciplinary mathematical and computational approaches are being developed for transportation, environmental, eHealth and communication domains, and work on thermal biomass conversion applies chemical engineering science and technology to the design and development of new products and processes that will enable society to have less harmful environmental impacts.

The School of Engineering and Applied Science has a long tradition of exploring innovative ways to engage students in learning. The newly established Aston STEM Education Centre (ASEC) encourages, supports and promotes this work with the intention of developing greater understanding as to 'what works' and 'why'.

Research groups

There are a number of primary research groups (see www.aston.ac.uk/eas/research/groups) in the School, including six Research Institutes, with some that are long established and are internationally renowned, organised as follows:

Chemical Engineering and Applied Chemistry

- Polymer and Advanced Materials
- Catalysis and Materials Computer Science
- Computer Science
- Non-linearity and Complexity (with Mathematics)
- ALICE: The Aston Lab for Intelligent Collectives Engineering
- Systems Analytics Research Institute

Electronic, Electrical and Power Engineering

- Adaptive Communication Networks Research
- Aston Institute of Photonic Technologies
- Nanoscience
- Power Engineering & Power Electronics

Engineering Systems and Management

- Aston Logistics and Systems Institute

European Bioenergy Research Institute

- Thermal processing
- Catalysis
- Algal cultivation and processing
- Bioenergy systems and markets

Mathematics

- Non-linearity and Complexity Research Group (with Computer Science)

Mechanical Engineering and Design

- Aston Institute of Materials Research
- Biomedical Engineering
- Sustainable Environment

Aston STEM Education Centre

REF 2014

Research at Aston has continued from strength to strength and recently we were ranked 35th in the UK by the REF, with 78% of our submissions to the Research and Excellence Framework being ranked as world leading or internationally excellent.

Electrical and Electronic Engineering and Computer Science and Informatics all received a **maximum 100 per cent for Research Impact** – the real world effect their 4* and 3* academic research has upon society, communities and businesses.

The research activities within the School of Engineering and Applied Science continue to develop, maintaining our emphasis on student and staff inclusion and a drive to innovate and engage with the economy.

Building on this, our plan is to continue our support for improving our students' and staff research experience, and to develop new research areas to complement our existing peaks of excellence.

RESEARCH FACILITIES

Across the School there are facilities dedicated for student use, and all students are supplied with individual computers and working space. In addition to local computing infrastructure, all staff and students have access to the School's existing 144-processor Cray XD1 and a 256 node SGI cluster computer.

There have been significant enhancements to the research infrastructure in the School with a total value in excess of £18M.

- The European Bioenergy Research Institute benefitted from a £18 million investment jointly funded by the ERDF and the University. This has established a brand new state of the art research facility with laboratory and pilot plant facilities in thermal biomass processing and catalysis.
- The Aston Institute of Photonic Technologies (AIPT) was created in 2012 in recognition of the world leading status of the photonics research at Aston University over the past 20 years, and has benefited from over £4 million of strategic investments in staff and infrastructure over the past decade including a 100 m² clean room constructed and equipped through AWM and SRIF funding (£400k);
- Grid Edge, a spin out company formed to develop Artificial Intelligence (AI) software that enables commercial and public building owners to intelligently control and optimise their building's energy loads. , was named "Best Start-Up" at the 2016 Silicon Canal Tech Awards. The software was developed through the £1.1 million ITHECA project.

In addition to this, the School has a range of specialised facilities which are resourced by each separate research or subject group through direct contract funds to support specific research activities in EAS.

Funding for Research

The School's research income has increased significantly over the last 2 census periods and has averaged £9.6M per annum since the 2010/11 academic year, with continued growth planned in future years. Research income originates from diverse sources - including the UK Research Councils (in particular EPSRC), EU (FP 7, Horizon 2020) the Royal Society/Royal Academy of Engineering, Innovate UK and the Leverhulme Trust.

A significant proportion of our research activity is either directly sponsored by, or undertaken in close partnership with industry or the local community.

The School's Computer Science Industry Club, a holistic, strategic partnership between industry and academia, offers industry the opportunity to access student expertise through tailored research projects. The Club has so far created a research portfolio in excess of £1 million and offered students 50 industry placements and 10 internships.

The European Bioenergy Research Institute (EBRI) works with SMEs through to multi-national companies on bespoke research for their organisation.

A £1.1m commercial R&D project, supported by Innovate UK, has successfully commissioned the UK's first permanent electric vehicle to grid (V2G) charging system. The project uses the EBRI site to develop three new commercial offerings for the project industry partners. EBRI is working with Cenex Ltd on the delivery of the vehicle to grid system and on investigating the various business models associated with V2G and intelligent EV charging.

IP across the School's research areas is exploited in partnership with the University's Research and Enterprise Office, which manages patenting, licensing, and setting up of spin-out companies based on selected research innovations.

Athena Swan

The Athena SWAN Charter, funded by the Equality Challenge Unit and the UKRC, aims to encourage institutions to recruit, retain and promote women in SET in higher education and research.

The School of Engineering and Applied Science holds a Silver Award from the Athena SWAN Charter in recognition of its support for women in STEMM disciplines. Aston University also holds an Athena SWAN Bronze award and is in the process of applying for Silver status.

These awards reflect the School and Aston's excellent practice in, and on-going commitment to, the career progression of female academics and researchers in STEMM subjects.

For more information, visit our website www.aston.ac.uk/seas

► Job description

Are you looking for an opportunity to apply your data science & analytics and Natural Language Processing skills to real world problems? This is an excellent opportunity to test your ability to solve practical problems with advanced machine learning and natural language processing in partnership with Aston University and an innovative high tech company.

This 36 month project takes the form of a Knowledge Transfer Partnership (KTP) (<http://www.ktponline.org.uk/>), which provides you with practical and formal training and the availability of support from experienced mentors, from the Company, Aston University and Innovate UK.

The Company

The company works in a highly competitive space, and some details have been redacted due to commercial confidentiality. It is technologically driven, and is based around large scale aggregation and analysis of "Big Data". It provides services, primarily to the digital marketing sector. 80% of the company's revenue is export sales. The company operates a Freemium model to attract users, with the aim of converting them to staged subscription plans with rising levels of capability or bespoke "reseller" licenses. The service is accessed by their website or an Application Programming Interface (API). The company has been trading commercially for around 10 years, but with less than 50 full time employees, it retains a start-up feel.

The Project

The company has partnered with Aston University on this KTP project to develop a novel search engine using machine learning and artificial intelligence, which will extract and deliver unique search engine intelligence, web trend data and business intelligence to inform clients' business strategy.

This role offers an exciting opportunity to work as part of a team with the company and Aston to apply the latest research techniques in data analytics and machine learning to develop an innovative software solution.

The skills developed during the course of the project including Machine Learning and Natural Language Processing will enable the successful candidate to become an established data scientist, which will significantly impact their future career.

Further details of the main duties and responsibilities of the role are detailed below.

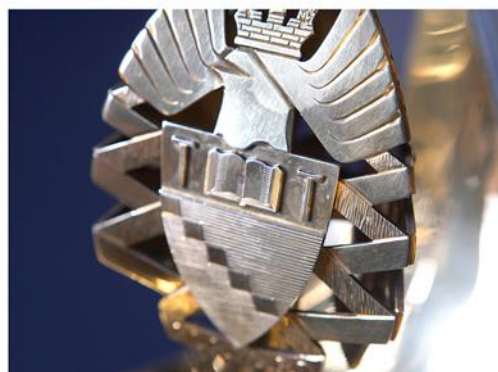
Responsibilities

Main Project Requirements (include but not limited to):

- ▶ Establish working group for integration of project outputs into existing software
- ▶ Initial data collection and familiarisation with existing the companies offers
- ▶ Developing an initial ranking model for integration and evaluation
- ▶ Develop methods for text representation and storage of semantically structured texts
- ▶ Query refinement and information retrieval
- ▶ Query intent detection – apply natural language processing
- ▶ Refine retrieval of documents based on searchers' intent
- ▶ Improve ranking processes applying filtering heuristics
- ▶ Deliver workshops/ seminars to embed knowledge, document all developments
- ▶ Project final evaluation and report. Develop roadmap for future product developments.

Additional responsibilities

- ▶ Engage in continuous personal and professional development in line with the demands of the role, including undertaking relevant training and development activities to develop themselves and support the development of others.
- ▶ Ensure and promote the personal health, safety and wellbeing of staff and students.
- ▶ Carry out duties in a way which promotes fairness in all matters and which engenders trust.
- ▶ Promote equality of opportunity and support diversity and inclusion as well as working to support the University's environmental sustainability agenda and practices.



▶ **Person specification**

	Essential	Method of assessment
Education and qualifications	PhD that includes Natural Language Processing, Machine Learning & Artificial Intelligence. Alternatively, a Masters Degree & a minimum of 2 years' experience in the application of these techniques will be considered.	Application form
Experience	Strong foundation in data science and data analytics including experience with machine learning algorithms. Natural Language Processing Machine Learning Artificial Intelligence	Application form, interview and presentation
Aptitude and skills	Excellent written and verbal communication skills including English fluent to native level. Industrial/ commercial experience gained from employment outside of academia. Strong organisational skills to take project ownership and achieve agreed objectives Managing projects and demonstrating ability to deliver to agreed costs and timescales Experience or understanding of Agile/Lean product development	Interview and presentation

	Essential	Method of assessment
	Self-motivated, with ability to work solo and as part of multiple teams.	

	Desirable	Method of assessment
Experience	Personal Attributes: Experience of Mentoring/ Coaching/ Teaching Ability to communicate and defend decisions, accept constructive criticism & seek the expertise of others. Ability to communicate ideas at all levels within the organisation and recognise the audience's particular needs. Fit in with the organisational culture and present a positive image of the company to clients. Appreciation of applicability of technology innovation to market.	Application form, interview and presentation

► Salary & benefits

This post is offered on a full time, fixed term basis for 36 months. The salary range for this grade is £30,000 to £35,000 per annum.

Holiday entitlement	25 days per annum, in addition to 8 days public holidays.
Pension	Eligible staff are offered membership of the University Superannuation Scheme which is a hybrid pension arrangement. For further information please visit www.uss.co.uk/members/members-home .
Contribution pay	The University's Performance Development and Reward Scheme provides for salary enhancement for staff who are considered to be performing at an exceptional level on a consistent basis.
Relocation	Aston University aims to recruit the most talented individuals. This policy is intended to support this aim by providing assistance to new employees who have to relocate to take up a position. This policy applies to staff appointed to a position from 1 January 2014 at grade 7 (salary point 25) or above on an open-ended contract or to a fixed term position of two years or more, and who have to relocate their place of residence in order to take up the appointment. Positions which are externally funded fall outside of this policy. Individuals may be eligible to claim costs in line with the relevant funding arrangements.

Visit our website: aston.ac.uk/hr for full details of our [salary scales](#) and the [benefits](#) Aston University staff enjoy.

► How to apply and the selection process

Please visit our website aston.ac.uk/jobs to apply online. If you do not have internet access, call 0121 204 4500 and leave your name and address quoting the job title and reference number.

Closing date for applications	23.59 hours GMT on Wednesday 8 November 2017
Interview date	To be confirmed

For informal enquiries about this role please contact Dr Luca Rossi on 0121 204 3230; l.rossi@aston.ac.uk or ktp@aston.ac.uk

If you would like information on the progress of your application, advice on any aspect of the appointment process, or a conversation about our terms and conditions of service, please contact:

Joanne Elsmore
HR Business Partner
+44 (0) 121 204 3908
j.elsmore@aston.ac.uk

Karen Clinton
Recruitment Administrator
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k.clinton@aston.ac.uk

► Outline terms and conditions of the appointment

Qualifications	Successful candidates will be required to produce evidence of their qualifications upon joining the University
Medical clearance	It is a condition of appointment that newly-appointed staff receive medical clearance from the University's Health Centre.
Eligibility to work in the UK	Candidates who are not citizens of the United Kingdom, or of another EEA member country, should check their eligibility to enter or remain in the UK in advance of making any job application via the UKVI website https://www.gov.uk/browse/visas-immigration/work-visas . Before applying you should ensure that you meet the requirements, including meeting the English language standards. If you do not meet the eligibility criteria, any application for a work visa would be unsuccessful.
Document checks	As a result of the implementation of sections 15 to 26 of the Immigration, Asylum and Nationality 2006 Act on 29 February 2008, the University requires all prospective and, in some cases, current employees, to provide documentation to verify their eligibility to work in the UK. Further information about these requirements can be found on the UK Visas and Immigration website .
Equal opportunities	<p>Aston University promotes equality and diversity in all aspects of its work. We aim to ensure, through our admissions policies for students, and our staff recruitment and selection processes, that we encourage applications from all groups represented in the wider community at a local, national and international level.</p> <p>The University will endeavour not to discriminate unfairly or illegally, directly or indirectly, against students or potential students, staff or potential staff. This commitment applies to all functions of the University and to any stage of an individual's career at Aston.</p> <p>An Equal Opportunities Monitoring Form is included with the application form.</p>
Data Protection Act 1998	<p>Your application will only be used to inform the selection process, unless you are successful, in which case it will form the basis of your personal record with the University which will be stored in manual and/or electronic files. Information in statistical form on present and former employees is given to appropriate outside bodies.</p> <p>Data you provide on the Equal Opportunities Monitoring Form will be included in a general database, for statistical monitoring purposes, enabling the University to monitor the effectiveness of its Policy, Code of Practice and Guidelines on Equal Opportunities in Employment. Individuals will not be identified by name.</p>

Disclosure and Barring Service (DBS)

Under the Rehabilitation of Offenders Act 1974, a person with a criminal record is not required to disclose any spent convictions unless the position they are applying for is listed as an exception under the act.

Full details of our terms and conditions of service and associated policies and procedures are available online at www.aston.ac.uk/hr.

Aston University
Employable Graduates
Exploitable Research

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www.aston.ac.uk

