Research Associate in Game Analytics

Computer Science

Closing date: 31 January 2019

Interview date: To Be Confirmed

Vacancy reference: 7245
INTRODUCTION

The University of York in collaboration with industry partners will carry out a major 2 year R&D project aiming to demonstrate how immersive and data-driven technologies can radically transform audience experiences surrounding esports. The project seeks to re-imagine the way audiences engage with the genre through hyper-personalised stories, interactive content, data-driven narratives and cross-reality experiences that seamlessly stretch across devices, technologies, and spaces. The project consortium includes key industry stakeholders and leading innovators across esports, VR, XR, virtual studio technology, 360 degree video and big data analytics, including ESL, the world’s leading esports company. The project will be carried out by a dedicated team of over 50 people, including software developers, 2D & 3D artists, content producers, designers, market analysts, business developers, as well as four key researchers located at the University of York, which will be leading on the key innovation areas of the project. The York-based project team will be situated at Digital Creativity Labs (DC Labs), a world centre of excellence for impact-driven research in digital creativity, focusing on digital games, interactive media and the rich space in which they converge.

We seek an outstanding researcher, possibly at an early stage of their career, with a record of research output and collaboration that points to huge potential for world-leading research in Game Analytics. We seek a researcher with experience in using Machine Learning and AI to identify patterns, understand behaviour and make predictions based on large volumes of data, ideally in the context of games. The successful candidate will play a key role in the project, work in the York-based team alongside other researchers and developers, closely collaborate with consortium members across the UK, and help with deployments and evaluation of research outputs in leading UK and international esports tournaments.

The postholder will have a record of excellent research, reflected in high quality publications and will bring an appetite for innovation across discipline boundaries and application domains. Applicants will have good programming skills (e.g. C, C++, C#, Python, Java, Unity) accompanied by passion to develop working research prototypes that can be applied in real-world environments. The postholder will have the opportunity to develop their career in the lively and stimulating environment of the Digital Creativity Labs, including taking part in inter-disciplinary research activities, (co)supervising interns and PhD students and taking training to enhance entrepreneurial skills.
Main purpose of the role

- To conduct research under the supervision of senior colleagues and to contribute to the production of research
- To assist in the identification and development of potential areas of research and the development of proposals for independent or collaborative research projects

Key responsibilities (Role holders will be required to undertake some or all of the duties below)

- To conduct individual and collaborative research projects, duties to include: analysis and interpretation of research data; use of appropriate research techniques and methods; writing up of research results and dissemination through publications, seminar and conference presentations and public engagement and outreach activities; contributing to the identification of possible new areas of research
- To build and maintain collaborations with the games industry and associated industries
- To undertake appropriate organisational and administrative activities connected to the research project, including conference organisation, and the development of promotional or educational material including website maintenance and development
- To develop and initiate collaborative working internally and externally, duties to include: the building of internal contacts and participation in internal networks; collaboration with colleagues on joint projects as required; participation in and identification of external networks in order to share information and identify potential opportunities for collaboration and possible sources of funding; attendance at and contribution to relevant meetings
- To provide guidance to other staff and students, as required, as well as coordinating the work of small research teams
- To assist with undergraduate teaching in own area of expertise.
- To contribute to the preparation of research proposals and applications to external bodies

Additional Role Responsibilities

- To collaborate with and grow a network of external organisations in conducting applied and translational research. The network will include digital games companies and partners in digital content production, which can incorporate research advances into the next generation of experiences around esports data and immersive technology, and organisations which can make use of user data to conduct social science and market research to engage their audiences.
- To engage and collaborate with research and researchers from other scientific disciplines in areas such as Game Analytics, Artificial Intelligence, Interactive Storytelling, Information Visualisation and Psychology.
- To achieve substantial economic, social and cultural impacts from research, principally by working with external partners.
- To work across disciplines and encourage a multidisciplinary perspective on research and impact, across the DC Labs and its partners, and across the wider University community.

Condition of appointment

This role is exempt from the Rehabilitation of Offenders Act. Consequently, all applicants will be asked to declare both unspent and spent convictions on their application form.

Appointment of the successful candidate will be conditional on a Disclosure and Barring Service check.

At a glance

Salary £32,236—£39,609

Hours of work Full time

Contract type Fixed Term

Based at Heslington Campus West

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## PERSON SPECIFICATION

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<th>Qualifications</th>
<th>Essential / Desirable</th>
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<tbody>
<tr>
<td>First degree in a Computer Science related subject or equivalent experience</td>
<td>Essential</td>
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<tr>
<td>PhD in Computer Science (e.g. Machine Learning, Artificial Intelligence, Game Analytics) or equivalent experience</td>
<td>Essential</td>
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<th>Knowledge</th>
<th>Essential / Desirable</th>
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<tr>
<td>Knowledge of the state of the art of research in Game Analytics and ability to apply analytical techniques to games</td>
<td>Essential</td>
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<tr>
<td>Knowledge of a range of Computer Science research techniques and methodologies</td>
<td>Essential</td>
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<tr>
<td>Knowledge of applying Machine Learning or other Artificial Intelligence techniques, ideally in the context of games</td>
<td>Essential</td>
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<tr>
<td>Knowledge of the state of the art in esports analytics</td>
<td>Desirable</td>
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<td>Knowledge of production and development methods used in the games and esports industries</td>
<td>Desirable</td>
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<tr>
<td>An understanding of research impact and knowledge of methods for generating social, cultural and economic impact from research</td>
<td>Desirable</td>
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<tr>
<th>Skills, abilities and competencies</th>
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<tr>
<td>Proficient in software engineering and programming (e.g. C, C++, C#, Python, Java, Unity)</td>
<td>Essential</td>
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<td>Ability to contribute to the development of prototypes and products that have the necessary level of refinement and robustness for deployment to large audiences</td>
<td>Essential</td>
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<td>Ability to work collaboratively in a large multi-disciplinary team spanning multiple locations and academic and industry members, and to take the lead when necessary.</td>
<td>Essential</td>
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<td>Ability to capture ideas from domain experts and stakeholders and translate them into research questions</td>
<td>Essential</td>
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<td>Highly developed communication skills to engage effectively with a wide ranging audience, both orally and in writing, using a range of media</td>
<td>Essential</td>
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<td>Ability to write up research work for publication in high profile journals and engage in public dissemination</td>
<td>Essential</td>
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<td>Ability to supervise the work of others, such as MSc or PhD students</td>
<td>Desirable</td>
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<td>Ability to contribute to the process of writing research funding proposals</td>
<td>Desirable</td>
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<tr>
<td>Experience</td>
<td>Essential / Desirable</td>
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<tr>
<td>Experience of conducting analytics in games and/or building AI/ML models or systems for evaluating and analysing player behaviour in games</td>
<td>Essential</td>
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<tr>
<td>Experience of carrying out independent and collaborative research, ideally in interdisciplinary teams that include academic and industry stakeholders</td>
<td>Essential</td>
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<td>Experience of writing up research work for publication and dissemination</td>
<td>Essential</td>
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<tr>
<td>Experience with game design and game and/or development</td>
<td>Desirable</td>
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<td>Experience of conducting research and development in the Esports sector</td>
<td>Desirable</td>
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<td>Experience with data visualization and/or data-driven storytelling</td>
<td>Desirable</td>
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<td>Experience of data mining/analytics for large-scale scientific or commercial data sets</td>
<td>Desirable</td>
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<td>Experience of generating research impact, in particular through collaboration with industry</td>
<td>Desirable</td>
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<th>Personal attributes</th>
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<tr>
<td>Interest in and enthusiasm for conducting research in the esports and games sector</td>
<td>Essential</td>
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<td>A team player with a collaborative approach, able to motivate and inspire others</td>
<td>Essential</td>
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<td>Positive attitude to colleagues, students and external stakeholders</td>
<td>Essential</td>
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<td>Self-motivated, pro-active and innovative</td>
<td>Essential</td>
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<td>Ability to plan and prioritize own work in order to meet deadlines</td>
<td>Essential</td>
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<td>Commitment to personal development and updating of knowledge and skills</td>
<td>Essential</td>
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<td>Flexible to travel to partner sites in the UK and international conferences</td>
<td>Essential</td>
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<tr>
<td>Attention to detail and commitment to high quality outputs</td>
<td>Essential</td>
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<tr>
<td>Entrepreneurial nature</td>
<td>Desirable</td>
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Digital Creativity Labs (DC Labs) is a major (£18 million) investment by three UK research councils, four universities, and over 100 collaborative stakeholder organisations to create a world centre of excellence for impact-driven research in digital creativity, which launched in April 2016. DC Labs is focused on digital interaction and media convergence: digital games, interactive media and the rich space in between. In DC Labs researchers, industry, government, the third sector and the general public are co-creating the means for interaction and expression in the future digital society, jointly realising the huge potential of games and interactive media for economic, social and cultural impact.

DC Labs is housed in purpose-built space within the Ron Cooke Hub, a £20m environment for creative ideas that brings together world class interdisciplinary research (the York Centre for Complex Systems Analysis), the Intelligent Games and Game Intelligence (IGGI) Centre for Doctoral Training, the 3Sixty (a totally immersive large black box with 360 degree projection and sound) and a large 3-storey atrium space for discussion and collaboration. DC Labs achieves rich synergies with the co-located IGGI Centre for Doctoral Training (www.iggi.org.uk) with over 60 PhD students, and the recently funded £15m AHRC Creative Media Labs, which has funded opportunities for companies to collaborate with researchers, PhD students and undergraduates to exploit the potential of immersive and interactive technologies for storytelling. The Ron Cooke Hub is adjacent to the Departments of Computer Science and Theatre Film and Television, the leading Departments for the DC Labs, and is a few minutes’ walk from the other collaborating Departments: Electronic Engineering, Archaeology, Sociology, Education and Psychology.

The Department of Theatre, Film and TV (TFTV)

Established in 2006, the department of TFTV is a highly innovative department, which brings together research, teaching and commercial activities in the fields of interactive media, film, television and theatre. The department’s research is defined by these fields and their interconnections, with a number of major cross-cutting themes, including storytelling, interaction, performance, communication, and intermediality. The research combines technology innovation with practice-based enquiry, founded in theoretical and historical investigation. The Research Excellence Framework (REF) 2014 results ranked York’s TFTV department 15th overall in the UK in its sector in terms of research outputs, with 75% of its research being ranked world leading or internationally excellent. This is testimony to the quality of research in this young and rapidly developing department.
THE DEPARTMENT

The department has excellent links with media and communication companies, such as BBC, BT, ITV, C4, Sony, with theatre companies including National Theatre, Royal Shakespeare Company, The Globe and York Theatre Royal, but also with various other cultural institutions and SMEs in media production and games. The department currently has 24 academic staff, 8 technicians, and a 13 staff making up the administrative and commercial team, as well as staff attached to specific externally funded projects. The academic staff includes both leading scholars and award-winning industry professionals and is expanding rapidly. There are currently some 460 students, with plans to expand to 500. The Department currently offers three undergraduate degrees and four taught postgraduate degrees, with further programmes under development, and has a thriving PhD programme.

The Department’s £30+ million award-winning building is designed to professional specifications and is one of the best-equipped facilities of its type in the UK. It incorporates two fully broadcast-compliant HD television studios with 3G infrastructure including links for OB trucks and provision for transmission uplink and downlink; a green screen studio overlaid with a high-definition marker-less motion capture system; postproduction laboratories with industry-standard tools and equipment for picture finishing and sound design; two dedicated audio labs; a 140-seat digital cinema with Dolby Digital-certified 7.1 and DTS sound as well as provision for satellite feeds; a 120-seat black box which also serves as a shooting stage and workshop space; a 200-seat thrust stage theatre (based on the Sheffield Crucible); two large rehearsal rooms (which can also be used as shooting stages); dressing rooms; workshops.

The Department of Computer Science

The Department of Computer Science has a very strong international research record. The Research Excellence Framework (REF) 2014 results ranked York’s Computer Science 7th overall in the UK, 5th for impact and 6th for environment. 90% of its academic staff were rated as “world leading” or “internationally excellent”. This result confirms the long-standing global reach and real-world significance of the department’s research and makes us one of the best departments in the country for nurturing excellent research and achieving economic, social and cultural impact from research. All aspects of its impact and environment were judged to be of world-leading or international standard. The Department has strong and long-standing links with industry and is highly regarded for its Continuing Professional Development courses. The Department has 55 members of academic and teaching staff and 28 research associates and fellows employed on research grants and contracts. Seven specialist teaching staff deliver modules to industry as part of our highly regarded CPD programme in safety critical systems. We have a vibrant graduate school of approximately 160 research students, and around 550 undergraduate and 220 full-time and part-time taught postgraduate students. The professional support team comprises 24 administrative staff and 12 technical and computing staff. The Department has excellent links with the Yorkshire digital games industry, and has strategic partnerships with several large companies including IBM.
THE UNIVERSITY

Founded on principles of excellence, equality and opportunity for all, the University of York opened in 1963 with just 230 students. In 2018 it is the home of more than 17,000 students across more than 30 academic departments and research centres. Since opening over fifty years ago, we have become one of the world's leading universities and a member of the prestigious Russell Group.

We are consistently recognised as one of the leading Higher Education Institutes and are ranked 16th in the Times & Sunday Times league table (2017). The University of York has won six Times Higher Education (THE) Awards and five Queen’s Anniversary Prizes.

The University is proud of its association with Athena SWAN, holding 12 awards in support of gender equality, representation and success for all, with gold awards for Chemistry and Biology and a University-wide bronze award.

Of 154 universities that took part in the Research Excellence Framework (REF) in 2014, The University of York ranked 14th overall and 10th for the impact of our research. The University is consistently in the top ten UK research universities and attracts over £60m a year of funding from research alone.

Our vision is to make the University of York a world leader in the creation of knowledge through fundamental and applied research, the sharing of knowledge by teaching students from varied backgrounds and the application of knowledge for the health, prosperity and well-being of people and society.
Attractive workplace

Centred around the picturesque village of Heslington on the edge of the city of York, our colleges are set in an attractive landscaped campus. York enjoys a safe, friendly atmosphere with facilities including bars, shops, theatres and concert halls all within easy walking distance.

The University has undergone an unprecedented period of expansion and renewal since 2000. We have invested in twenty new buildings on the original campus and have completed the first and second phases of a £750m campus expansion. Our investment in new colleges, teaching and learning spaces, laboratories, research facilities and a new sports village mean there has never been a better time to join us.

During this period of change we’ve worked hard to retain our friendly, informal and collegiate atmosphere, which is important to our core values of inclusivity and interdisciplinarity.

We have a thriving international community and are committed to providing staff moving to York with as much support as possible through our Relocation Package and Welcome Officers.

The University is committed to promoting a diverse and inclusive community - a place where we can all be ourselves and succeed on merit. We offer a range of family friendly, inclusive employment policies, flexible working arrangements, staff engagement forums, campus facilities and services to support staff from different backgrounds.

For further information please visit our employee benefit pages
THE CITY AND THE REGION

The City of York

Internationally acclaimed for its rich heritage and historic architecture, York's bustling streets are filled with visitors from all over the world. Within its medieval walls you will find the iconic gothic Minster, Clifford's Tower and the Shambles - just a few of the many attractions.

But York isn’t just a great place to visit - it’s also a great place to live and work. While nourishing a vibrant cosmopolitan atmosphere, York still maintains the friendly sense of community unique to a small city.

Visit [www.visityork.org](http://www.visityork.org) for more information on the city of York.

Shopping, culture and entertainment

York boasts specialist and unique boutiques but also all the high street stores on its busy shopping streets. Alongside them you will find cinemas, theatres, an opera house, art galleries, a vast range of restaurants, live music venues and clubs. York is particularly renowned for its multitude of pubs and bars, from the modern to the medieval.

Housing and schools

Whether you choose to live close to the city, in one of the surrounding villages or further afield, you will find a wide range of housing within comfortable distance of York and the University. For families, the area has a range of excellent schools both in the state and independent sector.

Great location

York is one of Britain's best-connected cities. Halfway between London and Edinburgh on the East Coast mainline, on intercity trains you can reach London King’s Cross in less than two hours and Edinburgh in two and a half hours. York is also well served by road links, and it is easily accessible from the A1, M1 and the M62.

For those travelling from overseas, Manchester Airport is two hours away and Heathrow Airport just three and a half. Flights from nearby Leeds Bradford Airport provide easy access to mainland Europe. By Eurostar from London St Pancras, Paris is just over six hours away.

Yorkshire

The Lonely Planet guide recently declared Yorkshire the third best region in the world to visit. There is something to cater to every taste, whether it be the rugged landscapes of the Moors or the Dales, the picturesque seaside towns of Scarborough and Robin Hoods Bay, the gothic architecture of Whitby or the vibrancy of cosmopolitan Leeds.
Apply online
- Go to https://jobs.york.ac.uk
- Find this job using reference 7245
- Complete the online application form

You will need to submit your completed application by midnight (local UK time) on 31 January 2019

What will I need?
You will need to upload:
- your CV
- a letter describing how you meet the requirements of the job

You will also need details of X referees.

Help and assistance
Direct any informal queries to jobs@digitalcreativity.ac.uk
If you have any questions about your application, contact the HR Services team:
recruitment@york.ac.uk
+44 (0)1904 324835