Research Associate—Computer Vision

Department of Computer Science

Closing date: 4 January 2019
Interview date: To be confirmed
Vacancy reference: 7208
This post is for a computer vision researcher to work full time on an interdisciplinary project entitled: ‘Archival Polar Photography – Unearting the Forgotten Record of Glacier Change’, funded by the Leverhulme Trust. The project aims to extend the record of historical glacier change further into the past by utilising the imagery held in the Scott Polar Research Institute (SPRI) Picture Library – one of the most comprehensive collections of polar imagery in the world. The successful candidate will collaborate with the SPRI picture library and with Glaciologists and Computer Scientists in York to extract information on the past extent of glaciers and ice bodies in Antarctica and Greenland from archival imagery. By comparing these findings with modern satellite and aerial imagery, the work will extend our record and understanding of changing ice extent back into the past by up to several decades, thus significantly lengthening the current record and aiding our understanding of the changes being experienced by these ice masses.

The successful candidate will focus on a) selecting and combining existing computer vision algorithms, b) developing new computer vision algorithms and c) implementing systems for i) clustering, geolocating and computing 3D models from the archival imagery as well as ii) registering archival imagery to modern satellite data. They will assist the glaciologists working on the project in allowing quantitative measurements to be made to explain the changes that have taken place between these older images and the present day. They will take the lead on relevant publications and conference presentations of the computer vision research, as well as assisting in the preparation of glaciological publications.
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 contribute to the preparation of follow-on research proposals and applications to external bodies
- 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.
## PERSON SPECIFICATION

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<tr>
<th>Qualifications</th>
<th>Essential / Desirable</th>
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<tr>
<td>First degree in Computer Science, Remote Sensing or other relevant subject</td>
<td>Essential</td>
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<tr>
<td>PhD in Computer Vision, Computer Graphics, Image Processing, Remote Sensing or related area</td>
<td>Essential</td>
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### Knowledge

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<tr>
<td>Knowledge of 3D computer vision/photogrammetry and multiview geometry</td>
<td>Essential</td>
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<td>Knowledge of visual search, scene recognition and image-based retrieval</td>
<td>Desirable</td>
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<td>Knowledge of remote sensing and GIS</td>
<td>Desirable</td>
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### Skills, abilities and competencies

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<th>Essential / Desirable</th>
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<tr>
<td>Highly developed programming skills (e.g. Matlab, Python, C/C++)</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>Competency to make presentations at conferences or exhibit work in other appropriate events</td>
<td>Essential</td>
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### Experience

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<tr>
<td>Experience of carrying out both independent and collaborative research</td>
<td>Essential</td>
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<td>Experience of publishing research in the top conferences and/or journals in the field</td>
<td>Essential</td>
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<td>Experience of undertaking research in 3D computer vision</td>
<td>Essential</td>
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<td>Experience of working with noisy, corrupted or archival data sources</td>
<td>Desirable</td>
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<td>Experience of implementing and releasing (e.g. as open source) research software</td>
<td>Desirable</td>
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### Personal attributes

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<tr>
<td>Collaborative ethos</td>
<td>Essential</td>
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<td>Interest in and enthusiasm for the subject matter of the project</td>
<td>Essential</td>
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<td>Willingness to work proactively with colleagues in other work areas/institutions</td>
<td>Essential</td>
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<td>Ability to plan and prioritise own work in order to meet deadlines, including using initiative to plan research programmes</td>
<td>Essential</td>
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THE DEPARTMENT

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 our REF submission was rated as "world leading" or "internationally excellent". This result confirms the longstanding global reach and real-world significance of our 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. The Department has a vibrant research portfolio, encompassing a number of research groups, themes and interdisciplinary centres. For more information on research in the Department see: https://www.cs.york.ac.uk/research/. The Department is housed in purpose-built accommodation within the Heslington Campus East. 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 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.
THE UNIVERSITY

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 6965
- Complete the online application form

You will need to submit your completed application by midnight (local UK time) on 4 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 2 referees.

Help and assistance

Direct any informal queries to william.smith@york.ac.uk

If you have any questions about your application, contact the HR Services team:

recruitment@york.ac.uk
+44 (0)1904 324835