Chair (Professor) in Systems Safety
Department of Computer Science

Closing date: 15/08/2021
Interview date: 23/09/2021
Vacancy reference: 9626
INTRODUCTION

As part of a significant further investment in Computer Science, I have pleasure in inviting you to apply for this Chair in Systems Safety. We have a strategic vision to be internationally leading in education and research on the engineering of safe, ethical and secure computational systems. This builds on our established world-leading reputation for teaching and research in safety-critical and high-integrity systems engineering. This, together with the University’s recent multi-million-pound strategic investment in the Institute for Safe Autonomy (ISA), where this role will be primarily based, makes this an exciting time to join the University of York.

As well as building on our successful teaching and CPD in safety-critical systems engineering, the Department, and Institute, are home to the Assuring Autonomy International Programme, which is an ambitious project funded by the Lloyds Register Foundation to establish assurance approaches and practices for autonomous systems.

The post-holder will be expected to pursue research of the highest standards, attracting external funding to support the Department’s research and innovation activities. They will also be expected to work across the Department and Institute to build links and partnerships with industry and government partners internationally. The successful candidate will join both an ambitious, expanding Department and an exciting new Institute that is a cornerstone of the University’s wider vision.

This role will offer the opportunity to work with a wide multi-disciplinary community of leading academics that publish in the highest ranked journals and conferences, attract significant research income, and teach to the highest standards. We are looking to appoint a high profile, candidate with a broad background in safety critical systems and are keen to encourage applications from strong candidates with equivalent experience from backgrounds outside of academia.

This is an exciting time in the lifetime of the Computer Science Department and the Institute of Safe Autonomy, and I encourage you to consider this opportunity.

Prof Paul Cairns
Head of Department, Computer Science
Main purpose of role

Chairs at York are expected to advance their subject nationally and internationally and to contribute to maintaining the University as an international centre of excellence for the relevant subject area through research and publication, teaching, networking and consultancy.

We are currently seeking applicants who will have an all-round impact on the development of the internationally leading Computer Science department and the newly-formed Institute for Safe Autonomy (ISA). Successful candidates will:

(i) be internationally excellent researchers and / or have extensive industrial experience in Systems Safety;

(ii) engage in collaboration within and outwith the Department, including supporting and mentoring early career researchers and postgraduate students, supporting and collaborating with ongoing research programmes within the Department and ISA

(iii) contribute academic leadership to the Department and University, particularly in leading development of Systems Safety research and teaching across the University;

(iv) engage with colleagues, supporting the continued development of teaching programmes in Systems Safety;

(v) work at senior levels within the Department and ISA and with external organisations to lead, generate and deliver Continuing Professional Development;

(vi) actively engage with the wider Department and University to help to create a distinctive and positive working environment that emphasises excellence.

Key Responsibilities

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

To support the research activities of the Department

- To carry out internationally outstanding research and scholarship
- To disseminate this research through monographs, articles in journals of international standing, and other appropriate forms of dissemination, including national and international conference presentations
- To play a leading role in the Department in identifying and securing external funding through research grants and contracts, and in developing collaborative research income-generating activities
- To attract and supervise research students, and, as appropriate, post-doctoral researchers and other support staff
- To support, comply with, and contribute fully to research plans and policies of the Department and the University
- To support and mentor junior academic colleagues in order to promote quality of teaching and research and their career development

To support the teaching objectives of the Department

- To design and be responsible for delivery of modules and teaching programmes for undergraduate and graduate students
- To play a leading role in departmental and interdepartmental curriculum development and quality enhancement
- To coordinate team teaching, as required, including liaison with other staff and with postgraduates who teach
- To design and mark assessments, and give feedback
- To supervise undergraduate and graduate projects and dissertations
- To carry out teaching in Continuing Professional Development
JOB DESCRIPTION

- To undertake pastoral support of students, as a personal supervisor or in another designated role
- To support and promote fully the University and Department teaching quality assurance standards and procedures

To contribute to the efficient management and administration of the Department

- To make an important contribution to the leadership and management of the Department, including supporting early career staff and developing new collaborative initiatives
- To attend Departmental meetings, meetings of the Board of Studies, and other committees and working groups within the Department and University
- To carry out relevant professional duties, commensurate with the Professorial grade
- To undertake specific departmental roles and management functions as may be reasonably required by the Head of Department
## PERSON SPECIFICATION

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<th>Essential / Desirable</th>
<th>Qualifications</th>
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<tr>
<td><strong>Essential</strong></td>
<td>PhD in Computer Science or a cognate discipline</td>
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<td>Membership of professional societies</td>
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<th>Essential / Desirable</th>
<th>Knowledge</th>
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<td><strong>Essential</strong></td>
<td>Outstanding and internationally recognised knowledge of systems safety</td>
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<th>Essential / Desirable</th>
<th>Skills, Abilities and Competencies</th>
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<tr>
<td><strong>Essential</strong></td>
<td>Ability to define, lead, manage and attract funds for internationally excellent research, operating across disciplinary boundaries</td>
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<td>Proven leadership and managerial skills</td>
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<td>Ability to manage and interact with staff and students at all levels and to contribute to broadening the strategic development of the Department</td>
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<td>Ability to publish academic work that is recognised as internationally leading</td>
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<td>Ability to work with external and non-academic organisations for research impact and CPD</td>
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<td>Evidence of international collaboration</td>
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<td>Evidence of peer review activities</td>
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<th>Essential / Desirable</th>
<th>Experience</th>
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<td><strong>Essential</strong></td>
<td>International leader in systems safety with leadership of research group/theme</td>
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<td>Substantial impact of work on academic, industrial or political community</td>
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<td>Attraction and effective supervision of staff and/or postgraduate students</td>
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<td>Significant and sustained success in accessing research grants or other external funding</td>
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<td>Exceptional achievement in curriculum development, course design and teaching, learning and assessment methods at UG and PG levels and in encouraging student access and engagement</td>
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## PERSON SPECIFICATION

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<th>Experience (continued)</th>
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<tr>
<td>Invited presentations at major international conferences or events</td>
<td>Essential</td>
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<td>Effective and sustained involvement in major administrative tasks or positions of responsibility</td>
<td>Essential</td>
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<td>Authorship of books</td>
<td>Desirable</td>
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<td>Editorial duties with journals</td>
<td>Desirable</td>
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<td>Activity as an invited examiner at other institutions</td>
<td>Desirable</td>
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<td>Participation in national teaching initiatives or international equivalents</td>
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### Personal Attributes

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<tr>
<td>Demonstrable capacity for strategic thinking and planning</td>
<td>Essential</td>
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<td>Ability to take a lead in key administration functions within the department</td>
<td>Essential</td>
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<td>Self-motivated, pro-active and innovative</td>
<td>Essential</td>
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The Department of Computer Science is a research-intensive department made up of over 70 academics delivering on-campus programmes to more than 800 students and online courses to over 1500 students. Our vision is to be internationally leading on education and research into engineering safe, ethical and secure computational systems. The Department of Computer Science has a very strong international research record in these areas. 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”. Our research is currently organised into themes which are supported through specialist research groups, most with long-established international reputations. The Department has strong and long-standing links with industry and is highly regarded for its Continuing Professional Development (CPD) courses, particularly in the area of safety critical software engineering.

The Institute for Safe Autonomy (ISA) will be housed in an innovative, purpose-built facility based on the University’s East campus. The new building will provide: world class research labs in robotics and communications; a home for a diverse range of staff and visitors; and act as a focal point for robotics at the University. Bringing together three existing centres of excellence at York: the Quantum Communications Hub, the Assuring Autonomy International Programme and YorRobots, together with a new research pillar in Society and Ethics, the ISA will act as a focal point for a broad community from across the University, our industry and government partners and the public. This exciting new Institute will further enhance York’s reputation as an international leader in the research and development of safe robotic, connected and autonomous systems.

The department also leads the EPSRC Centre for Doctoral Training in Intelligent Games and Games Intelligence (IGGI), which, together with QMUL, offers around 12 doctoral scholarships per year in the area of digital games research. We also have a newly established Grad School offering a further 6 PhD scholarships.

The appointee will join the High Integrity Systems Engineering (HISE) research group within the Department where you will be expected to show leadership in research and/or industrial collaborations and to mentor and support colleagues in their own research. Alongside, this you will have the usual research responsibilities such as supervising PhD students, developing research project proposals, and acquiring internal and external funding.

The initial teaching duties will vary with the post-holders’ experience. We regard teaching as an important avenue for delivering the impact of our research to the wider world. You will therefore be involved in the teaching and delivery of modules and programmes, particularly those that draw on your experience and expertise. The lecturing is likely to be as
ABOUT THE DEPARTMENT OF COMPUTER SCIENCE

part of a small team and mentoring and peer support of teaching will be provided as necessary. In addition, the post-holders will take part in the York Postgraduate Certificate in Academic Practice programme, unless they have an equivalent qualification.

The Department is primarily housed in purpose-built accommodation within the Heslington Campus East, close to the new Institute for Safe Autonomy building. The main Departmental building incorporate specialist research labs and a new Postgraduate Hub to provide a communal working space for some of our 160+ doctoral students.

Equality, Diversity and Inclusion

The Department aims to be a welcoming and supportive place to study and work for everyone. We work to support all students and staff to achieve their full potential and a good work-life balance.

The Department is committed to the Athena SWAN Charter for women in science and received a Bronze Athena SWAN award in October 2020 in recognition of our work to promote gender equality.

We have continue to make significant progress on issues of equality, diversity and inclusion, and look forward to working with our community to achieve the challenges we've set ourselves. @EqualityatYork
OUR COMMITMENT TO EQUALITY, DIVERSITY AND INCLUSION

Founded on the principles of excellence, equality and opportunity for all, the University is proud to create an environment that attracts staff and students from all over the world. What we gain from diversity is immeasurable.

Our Equality, Diversity and Inclusion Strategy, which was developed in partnership with our staff and student communities, describes our commitment to create a culture where everyone can contribute to university life, knowledge and growth.

We want to create a working, learning, social and living environment that will enable all staff and students to achieve their full potential. Our strategy sets out an ambitious set of objectives to succeed in our commitment, but we have a challenging journey ahead. We recognise that we are not truly representative of our communities locally, nationally and internationally. We would like to pay particular focus to gender parity across all levels, particularly in senior roles; the recruitment, retention and success of a more ethnically diverse staff and student community; an accessible and inclusive campus and ensuring that the values and behaviours we expect from everyone embrace inclusive responsibility and leadership.

Opportunity for all
Our outreach programmes and widening participation work have made us one of the most socially diverse universities among our peers. The York Students in Schools (YSIS) programme has been providing a helping hand in the city’s classrooms for 25 years, placing around 700 students with local schools every year. It recently introduced a new English and Mathematics tutoring scheme.

A report by The Reform Research Trust in September 2017 ranked York second out of 29 high-tariff institutions for our track record in increasing access for disadvantaged students from 2011/12 to 2015/16.

Wellbeing and support
Students are encouraged to balance their studies with activities and interests to give them a healthier and more rounded student experience. We have invested heavily in support of physical health with new and improved sports facilities, and in mental health through our Open Door counselling and crisis team which now opens in the evenings during term time. We have also developed a support network of staff trained in Mental Health First Aid. University staff have access to wellbeing help and support, and can access advice through our site. We have launched a new health and wellbeing plan with actions informed by our latest staff survey.
THE UNIVERSITY OF YORK

We are a world-class institution, focused on creating an environment of excellence in which all our students, staff and researchers can thrive. Our Research Strategy encompasses our vision that York should provide a home for some of the best research in the world. ([https://www.york.ac.uk/research/](https://www.york.ac.uk/research/))

We are a high-performing member of the Russell Group, ranked 16th in the Guardian’s Best University UK Universities 2021 League Table, and 30th in the Complete University Guide 2020. We have been awarded TEF Gold for our research-led teaching which provides "consistently outstanding outcomes for students from all backgrounds".

Our Equality, Diversity and Inclusion Strategy speaks to the core of our values. We hold 16 awards from Athena SWAN, recognising the advancement of gender equality: representation, progression and success for all.

Our vision is to be a university for public good, supported by five key strategic themes:

- Internationalism
- Sustainability
- Civic responsibility
- Research
- Student experience and teaching

At the heart of the region

The University is deeply embedded in the local community of North Yorkshire. Our values and commitment to the public good have never been more important. We are a hub for sharing knowledge, inspiring collaboration and enriching lives.

Across the University, we are mobilising our knowledge, our people and our resources to tackle the immediate and long-term challenges created by the coronavirus crisis.

[https://features.york.ac.uk/who-we-are/](https://features.york.ac.uk/who-we-are/)
Our campus community

Located within walking distance of York city centre, our safe and beautiful campus is home to our ten colleges and most departments. We also have departments located in the city centre at the historic King’s Manor, and we are investing in the sustainable development of our whole campus.

All York students become members of our college system, which provides an inclusive and a valuable sense of community on campus alongside the cultural offerings of the thriving city of York.

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
https://www.york.ac.uk/admin/hr/employee-benefits/selection/introduction/
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 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 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.
HOW TO APPLY

Apply online

- Go to https://jobs.york.ac.uk
- Find this job using reference 9626
- Complete the online application form

You will need to submit your completed application by midnight (local UK time) on 15 August 2021.

What will I need?

We will ask you for details of:

- Your CV
- A letter describing how you meet the requirements of the job
- A statement of your research and teaching intentions

You will also need to provide details of three academic referees (one International) and one Employment referee.

Help and assistance

Please direct informal enquiries to Professor Paul Cairns, Head of Department (paul.cairns@york.ac.uk).

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

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