

Job Description: Associate Professor (Research and Education)

Post title and post number	Associate Professor in Cyber-Physical Systems (Research and Education) - 100440
College/Budget Centre	EPS
School/Department	Computer Science
Full time/Part time	Full time
Duration of the Post	Open
Salary	Grade 9
Additional information	
Terms and Conditions	Academic Teaching Staff
Closing Date	27 May 2024
Grade	9

Information for Applicants

The School of Computer Science at the University of Birmingham, UK, seeks to recruit talented computer scientists from diverse backgrounds for the role of Assistant or Associate Professor. Successful candidates will join a vibrant School, regarded as one of the best in the UK in academic research, societal impact and education. This round welcomes applications from enthusiastic academics in Computer Science, particularly emphasising cyber-physical systems. Successful candidates will join in pursuing collaborative, challenge-led, research based on interdisciplinary research funding and in further improving diversity and inclusion in computer science research and education. New staff will also benefit from a programme of dedicated support for career development through Birmingham's Academic Development Programme.

Summary of Role

The School of Computer Science at the University of Birmingham is recruiting new academic staff to fulfil its ambitions as a leading UK university for computer science. We seek to recruit across the broad spectrum of computer science, with a particular emphasis to strengthen and expand our research on cyber-physical systems. Potential specific research foci include formal verification, safe autonomy and AI, control theory, and model checking. We encourage applications from across the areas of cyber physical systems, verification and learning. The research focus of the post holder is expected to complement and strengthen the link between the current research areas of the School of Computer Science, which are Artificial Intelligence, Cyber Security, Theoretical Computer Science and Socio-Technical Systems.

Computer Science at the University of Birmingham is one of the leading UK institutions for research and teaching in computer science. Our research is ranked 3rd across all UK universities according to the latest UK-wide Research Excellence Framework. Education is ranked 7th in the UK for computer science, according to 2023 tables. While pursuing excellence in research and education, we also aim to optimize our positive impact on society—examples include collaborations with industry partners and charities, commercialisation activities and an extensive wider participation programme. To support its aims, the School offers a vibrant, open and intellectually stimulating work environment in its dedicated computer science building, educating well over 1500 students.

We value diversity and inclusion and welcome applications from all sections of the community and are open to discussions around all forms of flexible working. We support and mentor new staff through the Academic Development Programme, which provides a 5-year development programme, at the end of which staff are expected to be promoted to Associate Professor. The programme consists of a variety of development opportunities and the time to reflect and develop, provides mentoring, grant writing workshops/training and exposes you to colleagues across the disciplines and in our business and entrepreneurship units.

This post is for both Assistant Professor and Associate Professor level. Candidates should state which level they are applying for in the application.

For general inquiries contact the Head of School - Prof Aad van Moorsel
a.vanmoorsel@bham.ac.uk.

Candidates are required to upload their CV, should which include full citations plus URLs for 4 selected publications in the last 5 years. They are also recommended to upload below documents to support their applications:

- Covering letter, which can be filled in the application, so the document upload is optional
- Research Statement
- Teaching Statement

This advert will close on 27 May 2024. We follow a two-stage appointment process: in June, longlisted candidates will be invited to give an online, 20-minute, research presentation, based on which shortlisting takes place. Shortlisted candidates will then be invited to visit the University of Birmingham (early July), meet with staff members and students (if possible), and conduct a panel interview.

Main Duties / Responsibilities

Education

You will contribute across the range of teaching and learning activities:

- making a significant contribution to the pedagogical knowledge base of the subject that advances teaching through the enhancement of practice, the development of teaching resources and/or through practice-based research;
- leading on the management and the development of approaches to teaching and learning, including designing innovative approaches to digital resources/environments and supporting colleagues to use them that are innovative to the subject area or institution;
- leading on curriculum design at module and programme level to ensure it is contemporary, inclusive, engaging and academically challenging;
- actively engaging students in curriculum design and sharing evidence of “what works”;
- making an impactful, high quality contribution to debates about education policy, methods and practices through internal and external publications, subject societies and conference activity;
- developing an external profile evidenced through engaging in external quality assurance activities related to teaching, eg. external examining and engaging with/supporting education in other institutions;
- playing an important and sustained role in the recruitment and admission of students;
- co-supervising doctoral students to completion;
- leading the development of teaching, learning and assessment policies and strategies;
- acting as an education mentor to colleagues in the School/Department/College or more widely;
- leading the development of new and appropriate approaches to learning and teaching. This may be underpinned by research and evaluation of teaching methods and systems
- leading sustained high value impact in knowledge transfer and enterprise (including business engagement, public engagement) that enhances the student experience and/or or

employability, and is of manifest benefit to learning and teaching in the College and the University

- undertaking own teaching, which will include teaching and examining courses at a range of levels, planning and reviewing own teaching approaches, developing programme proposals, supervision, marking and examining. You will ensure that your teaching practice is informed by discipline based research, through participating in the research culture of the School.

Research

To pursue sustained research activity through original research and scholarship, including other research-related contributions through conference papers and presentations and/or consultancy projects and advice, including (as appropriate):

- contributing to the management of research activities and/or supervising other research staff;
- leading successful funding bids;
- consistently publishing internationally excellent research, with some research regarded as world leading, that results in a sustained, highly respected reputation of international quality;
- supervising and examining PhD students, both within the institution and externally;
- providing expert advice internally and externally;
- peer reviewing articles for peer reviewed academic journals and grant applications by research councils and/or other major funding bodies;
- leading sustained impact activity including public engagement and makes a significant contribution to policy development at a national and international level;
- supervising and examine PhD students, both within the institution and externally;
- as appropriate, managing research activities and/or supervising other research staff;
- developing novel methodologies and techniques appropriate to the type of research being pursued.

Management/administration

Lead activities in the Department/ School and represent the School on College/ University committees or working groups. Where appropriate to the discipline, this is likely to include some but not all of the responsibilities listed below:

- making an important contribution to the development and running of the Department or School, for example, leading activity on research and/or teaching assessment
- leading a successful international engagement at School or College level;
- developing and managing staff and resources in support of major research and/or teaching activities
- making important contributions to the development of the Department's research and/or learning and teaching strategy
- contributing significantly to the development and delivery of knowledge transfer, enterprise, business engagement and public engagement activities with sustained high value impact of manifest benefit to the College and the University;
- promoting a culture (including policies and procedures) that embeds equality and values diversity and inclusion
- leading, serving on and assisting the work of committees and task and finish groups beyond School/ Research Institute, e.g., Senate, Council, University Education or Research Committee etc.;
- leading external committees, e.g., those associated with public/professional bodies or delivery of activities for an external body at an appropriate level, e.g., chairing sub committees associated with large elements of work;
- leading/project managing a team to devise and implement a new and/or revised process (e.g. a new research initiative, or a recruitment drive);
- making a sustained contribution to widening participation, schools outreach and/or public understanding of the discipline;.

- contributing to administrative activities within the University (e.g. appeals panels, working groups).

Citizenship

- identifying wellbeing issues within the School/College/University and developing appropriate solutions to address these;
- taking collective ownership of challenges faced by the School or College and working with colleagues to develop solutions;
- mentoring and coaching of colleagues, particularly those in the early stages of their career.

Person Specification

- Normally, a higher degree relevant to the research/teaching area (usually PhD) or equivalent qualifications.

Demonstrated excellence in at least Research, with competence in Learning and Teaching and Management and Administration.

Learning and teaching requirements

An excellent teaching profile and performance in terms of both impact and quality. The teaching quality demonstrated to be informed by an appropriate level of scholarship.

Where appropriate, evidence of success under the following headings:

- High national reputation for the development of teaching and learning excellence within the discipline
- Successful and sustained use of a range of appropriate teaching methods, and assessment strategies that promote high quality learning, including learning that is flexible, distinctive and current and stimulates learners' natural curiosity
- Significant and sustained contribution to one or more of the following: strategic development of new programmes; approaches to learning; the development of learning resources
- High quality and sustained contributions to fostering excellence in teaching activities more widely, i.e. in the Department/School or College and/or externally
- Track record of substantial and sustained high value impact on the enhancement of the student experience, and/or employability
- Mentoring and expert advice which develops the skills of colleagues in teaching and in fostering learning

Research requirements

An excellent national reputation and a developing international profile through significant original research work and a clear record of impact. Evidence of success under the following headings, as appropriate to the discipline:

- High level peer esteem as evidenced by
 - Excellent reputation in the UK and often internationally, reflected in sustained high-quality output, level of innovation, impact on subject and recognition
 - An excellent and sustained record of peer reviewed research publications
- Successful and sustained supervision of doctoral students to completion
- Substantial and sustained research income generation, e.g. through research grants, contracts, research consultancy or other external funding
- Sustained high value impact knowledge transfer and enterprise that is of manifest benefit to the College and University

Management and administration-related requirements

Demonstrated significant achievement in management and administration-related activities, which may include leadership of activities/initiatives. Evidence of success under the following headings

- Successful and sustained performance in significant administrative/managerial role (s) (e.g. exams officer)
- Significant and sustained high quality innovative contributions to the management/administration of the Department/School/College or University
- Successful and sustained contribution to the corporate life of the School/College/University, displaying willingness to contribute actively to committees, collaborative teaching and administrative tasks
- Actively promotes equality and diversity to internal and external stakeholders
- Able to use data to identify equality and diversity issues
- Experience of developing interventions to address equality and diversity issues