



Position Name	Assistant Professor in Digital Manufacturing	
College/Budget Centre	EPS/Engineering/ Mechanical	
Position Number (if Known)		
Proposed Grade	Grade 8 – Research and Education	
Reason for grading request	X	New role: - If comparator role exists, please give post title / number:
		Re-grade for existing post-holder
Background		
This is an exceptional time to join the University of Birmingham's School of Engineering. Established in 2016, amalgamating the disciplines of Civil, Mechanical, and Electrical and Electronic Engineering, the School has invested heavily in infrastructure and people; with a new £65M flagship building, a £28M UK Rail Research and Innovation Network (UKRRIN) Centre, and a £26M National Buried Infrastructure Facility. The School of Engineering has also recently secured over £1M in funding for practical robotics teaching. Our School is renowned for world-class research and strong ties with industry, ensuring rapid practical application of our innovations. We continue to strategically grow our research portfolio and we are now recruiting an Assistant or Associate Professor in Digital Manufacturing to help tackle the engineering challenges of applying artificial intelligence and digital technologies across modern manufacturing and robotics. Digitalisation and artificial intelligence are reshaping how products are designed, made, maintained and given a second life. The School of Engineering hosts strong activity in digital, advanced and sustainable manufacturing and robotics, with close links to the Manufacturing Technology Centre and the University's Institute for Robotics. The successful candidate will also have the opportunity to engage with and contribute to our national research hubs – the Co-AIMS Hub (Collaborative AI for Manufacturing Sustainability) and the RESCu-M2 Hub (robotics- and smart-machine-enabled circular manufacturing). We are seeking a researcher in the engineering of artificial intelligence for manufacturing and robotics – spanning challenges such as trustworthy and data-efficient machine learning, autonomous and collaborative robotic systems, digital twins, and physics-informed or hybrid AI models. The role supports growth across sectors including automotive, aerospace, clean energy, medical devices and circular ('Re-X') supply chains, and contributes to succession planning in manufacturing leadership. The successful candidate will be expected to create and disseminate knowledge through initiating and conducting original research, and publication in the above-mentioned areas. They will develop and deliver undergraduate, postgraduate and CPD programmes relevant to digital manufacturing and robotics. In addition, they will contribute to the department, and wider school, through management/leadership and enterprise activities, as appropriate. Candidates will have an appropriate engineering or computer science background, including a PhD. Experience of mechanical engineering, along with experience in working or engaging with industry stakeholders would be desirable. A demonstratable track record in working within multi-disciplinary		

research teams and contributing towards grant pursuit is also desirable. The successful candidate will be expected to engage actively with industrial and policy partners in the UK and internationally.

The School of Engineering is committed to upholding the principles of Equality, Diversity, and Inclusion (EDI) in all our pursuits, and we actively encourage applications from underrepresented groups. We welcome applications from people of all backgrounds and genders, will consider part-time, job-share and flexible-working arrangements, and may appoint at either Assistant or Associate Professor level according to experience.

For further information and informal inquiries, please get in touch with Dr Carl Anthony, email: c.j.anthony@bham.ac.uk

Summary of Role

As an assistant professor, you must contribute to research, teaching, and administration while actively supporting and promoting Equity, Diversity, and Inclusion (EDI) principles.

This involves initiating, leading, conducting, and disseminating original research. This research should not only have measurable outcomes and foster a growing national and incipient (ideally) international reputation but also be inclusive and equitable, considering diverse perspectives and promoting underrepresented voices in the field.

Your teaching role will contribute to the management, development (including program/module review), and delivery of teaching and assessment within engineering and the wider college. Your pedagogical approach must be inclusive, accessible, and responsive to diverse student needs, experiences, and backgrounds, enhancing all students' experience and employability. The role will typically also involve developing and advising others, including (a) providing expert advice to staff and students of all identities, (b) supervising and examining PhD students, ensuring fair and equitable treatment, and (c) advising others on inclusive learning and teaching methods and strategies in manufacturing and mechanical engineering. A particular focus of this post is developing modules that embed artificial intelligence and digital engineering tools into the manufacturing and mechanical engineering curriculum.

Management and administration are likely to involve contributions within the allocated research group and at Departmental and School level and or making an essential contribution to some managerial/leadership activities (e.g., working groups) within the University. This may include developing and making substantial contributions to EDI initiatives, knowledge transfer, enterprise, business engagement, public engagement, widening participation, schools' outreach, or similar activities at Department/School level or further within the University.

Main Duties / Responsibilities

Research

To plan and conduct research using appropriate methodology and techniques. This role involves, where appropriate to the discipline:

- Pursuing personal research, including developing research ideas, and acquiring support, including financial support;
- Planning, publishing, and or executing high-quality research;
- Project managing research activities and or supervising research staff;
- Presenting findings in high-quality publications and conference proceedings;
- Developing novel methodologies and techniques appropriate to the type of research pursued;
- Supervising and examining PhD students, both within the institution and externally, while promoting a culture of inclusion and diversity;
- Providing expert advice to staff and students within the discipline;
- Applying knowledge in a manner that develops new intellectual understanding;

- Developing and contributing significantly to knowledge transfer, enterprise (including business engagement, public engagement) and similar activities that benefit the College, University, and broader diverse communities.

Education

To use a variety of inclusive teaching and advising methods for individuals and groups of undergraduates, postgraduates, or CPD students, this may include:

- Teaching and examining courses at various levels while considering diverse learning styles and backgrounds;
- Planning and reviewing own teaching approaches, including inclusivity, and mentoring others to do the same;
- Developing programme proposals and making substantial contributions to the design of teaching programmes in the Department or School, incorporating EDI principles;
- Utilising appropriate and inclusive approaches to learning and teaching in their field;
- Disseminating best practices through suitable media;
- Developing and advising others on inclusive learning and teaching tasks and methods;
- Plan, develop, deliver and assess distance learning modules with learning designers and other colleagues, leading a module tutor team as appropriate;
- Devising and supervising projects, student dissertations, and practical work on technical and non-technical courses, considering the diversity of student backgrounds.

Management/Administration

To contribute to the administration or management of the Department/School or have a high level of responsibility for others, embracing the principles of equality, diversity, and inclusion. This may involve:

- Contribution to the administration/management of research and/or teaching teams across the Department/School;
- Leading and managing a team to devise and implement a new or revised inclusive process (e.g., new programme, recruitment drive to increase diversity);
- Advising on the personal and professional development of colleagues and students, promoting diversity and inclusivity;
- Making a significant contribution to some administrative activities within the University (e.g., appeals panels, working groups), ensuring fair and inclusive practices;
- Managing enterprise, business development, and public engagement activities that benefit the College, University, and broader communities, including an emphasis on inclusivity;
- Developing and making substantial contributions to knowledge transfer, enterprise, business engagement, public engagement, widening participation, and schools' outreach whilst promoting equality, diversity, and inclusion;
- Other relevant criteria from our [equality and diversity duties document](#).

Citizenship

To contribute to an inclusive working environment:

- Demonstrating a willingness to participate in various activities supporting University life (e.g., participation in graduation, Departmental/School committees);
- Demonstrating support for colleagues, such as sharing resources and providing advice;
- Willingness to volunteer for one-off duties (such as supporting School, Institute, and Departmental projects);
- Positively engaging in School strategic initiatives;
- Proactive support and involvement in activities explicitly contributing to a positive and inclusive community spirit across the School/College/University;

Person Specification

- A first degree - We encourage applications from candidates with diverse educational backgrounds;
- A doctoral qualification in Engineering (or an allied subject) relevant to digital manufacturing;
- Industrial experience, either through working in or with industry would be desirable.

Research requirements.

- Experience and achievement reflected in a growing reputation, in the engineering of artificial intelligence for manufacturing and robotics, or a closely related area of digital manufacturing;
- Experience and demonstrated success in planning, undertaking and project managing research to deliver high-quality results;
- Experience of applying and/or developing and devising successful models, techniques, and methods in digital manufacturing and robotics;
- Experience and achievement in knowledge transfer, enterprise, industry or public engagement and similar activity;
- Prior research experience in one or more of the following areas: science and technology studies, qualitative and/or quantitative social research data collection, science communication/engagement, or responsible research and innovation;
- A demonstratable track record in working within multi-disciplinary research teams and contributions to team-based grant pursuit is also desirable;
- Demonstratable experience of developing/maintaining a national/international research profile through platforms/methods such as social media.

Education

- Experience of educational delivery at university level, to undergraduate or postgraduate cohorts, in manufacturing, mechanical engineering or related subjects, with a willingness to develop teaching that embeds AI and digital engineering tools;
- A willingness to design, deliver, assess, and revise teaching programmes, creating an inclusive and supportive teaching and learning environment for students of all backgrounds;
- Experience and success in knowledge transfer, enterprise, and similar activities that could enhance the student experience or employability, empowering students with diverse skills and experiences.

Management Administration

- Ability and willingness to contribute to School/Departmental management processes;
- Ability to assess and organise resources effectively, creating a work environment that values diverse ideas and perspectives;
- Understanding of and ability to contribute to broader management/administration processes;
- Other relevant criteria from our [equality and diversity knowledge, skills and experience document](#).

The above information will form the Further Particulars for the role. The following should all have been addressed under the various sections.

- Who, and in what ways the post-holder is required to communicate with others
- The type of problems the post-holder will face, and the ways they will deal with these
- The ways in which the employee will be expected to organise themselves and others.
- The responsibilities the post-holder will possess.

It is likely that these will be reflected in the above sections. If any of these 4 areas are not reflected fully above and you feel that this would not be appropriate for them to appear in the Further Particulars for the role, please detail them here.