

Programming and Data Science – Knowledge Exchange Associate

Department	Advanced Forming Research Centre, Department of Design, Manufacture and Engineering Management (www.strath.ac.uk/engineering/designmanufactureengineeringmanagement/)		
Faculty	Faculty of Engineering (www.strath.ac.uk/engineering/)		
Staff Category	Knowledge Exchange	Reference No	481496
Reports To	Materials Modelling Theme Lead	Grade:	7
Salary Range:	£34,308 - £42,155	Contract Type:	Fixed Term (24 months)
FTE:	1 (35 hours/week)	Closing Date	20 November 2022
Holidays	31 annual leave & 11 public holidays Option to purchase additional holidays		
Pensions	Contributory pension scheme available to all staff including generous employer contribution.		
Training	Professional Development with Organisational and Staff Development Unit (OSDU) plus external training if required		
Family Friendly Benefits	Generous parental leave provision and options for flexible working		
Health and Wellbeing	University Sport centre, Occupational Health service, access to health and wellbeing events, cycle to work scheme, Employee Assistance Programme, agile working and established carers support network and carer friendly policies		

Job Advert

The University of Strathclyde in Glasgow possesses a large internationally rated Engineering Faculty with a proud history of successful joint ventures with industrial and enterprise partners. As part of the University's strategic development the Advanced Forming Research Centre (AFRC) has been established near Glasgow's International Airport. The AFRC is the embodiment of a £30 million collaborative investment by Industrial, Academic and Government partners seeking to establish a world-leading research facility for forging and forming technologies.

The AFRC is seeking to appoint an experienced Programming and Data Science Knowledge Exchange (KE) Associate to support the delivery of high value research programmes focused on the digital transformation of manufacturing for the forming and forging industries and the implementation of Industry 4.0 across the wider manufacturing sector. Recently the Centre has invested significantly in novel forging equipment suitable for large scale investigations and is rapidly developing a multi-disciplinary group that specialises in this area. The KE Associate will also support the delivery of scientific research programmes on processing of materials, optimisation of manufacturing processes, and the design, assembly, monitoring and control of auxiliary equipment for a variety of industries.

The candidate will also be expected to support and contribute to high value industrial funding proposals in support of a range of projects across the Centre. The post holder will be expected to work between the AFRC and its industrial and academic partners and there will be a strong emphasis on knowledge exchange.

To achieve the above the KE will preferably require some research and/or industrial experience in the following technical areas:

- A good basic knowledge of programming and data science with extensions towards the development and implementation of digital twins of processes.
- The use of engineering and general-purpose programming languages, e.g. Matlab, Python, Java and Fortran.
- Development of graphical user interfaces and software for engineering applications, including but not limited to visualization of data, processing of data and optimization algorithms, data and database management.
- Linkage of commercial Finite Element software packages (e.g. Abaqus, Ansys or Simufact) with experimental and analytical data sources

The post holder will require the knowledge, skills and experience normally associated with a first degree and PhD for example in Computer Science, Software Engineering, Data Science; we are also interested in candidates with equivalent industrial experience.

To be considered for this role, you will be educated to a minimum of PhD level in an appropriate discipline or be educated to a minimum of 2:1 Honors degree in addition to significant relevant experience within a relevant industrial environment. You will have the ability to work autonomously, plan and prioritise own workload with guidance from a team/project leader, and deal with complex problems presented to you by colleagues. You will have experience of project planning and delivery, as well as excellent communication and interpersonal skills, with a proven ability to interact with a range of stakeholders from industry and/or academia. You will have an established track record in providing engineering solutions in an industrial context as well as experience of supporting research and development of manufacturing processes. You will have excellent troubleshooting skills, including a methodical approach to solve complex problems and you will have the ability to work as part of a multi-disciplinary team.

Job Description

Brief Outline of Job:

To undertake a specific knowledge exchange project/s under the general guidance of a knowledge exchange / research leader; to establish a personal knowledge exchange portfolio and plan knowledge exchange proposals, with assistance from senior colleagues as required; to engage where required in relevant research and teaching; and input to administrative activities.

Main Activities/Responsibilities:

1.	Carry out research in the area of Programming and Data Science for the development and implementation of Digital Twins in manufacturing.
2.	Enhance the AFRC manufacturing related capability by proposing improvements based on estimated future requirements and research needs.
3.	Contribute towards engineering solutions on forging and forming related materials characterisations, mechanical testing and development of appropriate methodology for part manufacturing in the form of standalone apps.
4.	As part of a wider knowledge exchange / research group or programme, develop knowledge exchange objectives and proposals for own or joint knowledge exchange activities and play a lead role in relation to a specific project/s or part of a broader project, with guidance from senior colleagues as required.
5.	Plan and manage own workload, with guidance from colleagues as required.
6.	Conduct individual and/or collaborative knowledge exchange activities, including determining appropriate methods and contributing to the development of new knowledge exchange methods, continually reflecting on practice/methodology to enhance delivery to partners.
7.	Identify sources of funding and contribute to the securing of funds for knowledge exchange activities, including fostering links with potential partners, drafting proposals and planning for future proposals.
8.	Write up reports, individually or in collaboration with colleagues, for external organisations, and further write up findings for additional dissemination (e.g. professional publications or peer review journal publication) as appropriate.
9.	Join external networks to share information and ideas, inform the development of knowledge exchange objectives and to identify potential sources of funding.
10.	Collaborate with colleagues to ensure that knowledge exchange advances inform departmental research and teaching efforts.
11.	Participate in running successful CPD events and consultancy activity.
12.	Supervise student projects, provide advice to students and contribute to teaching as required by, for example, running tutorials and supervising practical work.

13.	Contribute in a developing capacity to Department/School, Faculty and/or University administrative and management functions and committees.
14.	Engage in continuous professional development.

Person Specification

Educational and/or Professional Qualifications

(E=Essential, i.e. a candidate must meet all essential criteria to be considered for selection, D=Desirable)

E1 Good honours degree and PhD / higher degree (or equivalent professional experience) in appropriate discipline (Computer Science, Software Engineering, Data Science).

D1 Membership of relevant Chartered/professional bodies (for example Higher Education Academy).

Experience

E2 Sufficient breadth and depth of knowledge in the relevant discipline/s (Computer Science, General programming, Data Science) to contribute to knowledge exchange programmes and to the development of knowledge exchange activities.

D2 Some relevant work experience.

D3 Experience of relevant student supervision and teaching activities.

Job Related Skills and Achievements

E3 Knowledge of engineering and general purpose programming languages, e.g. Matlab, Python, Java, Fortran

E4 An understanding of data management principles and their application in manufacturing

E5 Application of optimization algorithms in combined experimental, analytical and simulation data

E6 Ability to conduct individual knowledge exchange projects, work directly and independently with clients, and to prepare new knowledge exchange proposals.

E7 Ability to plan and organise own workload effectively.

E8 Ability to work constructively within a team environment.

Personal Attributes

E9 Excellent interpersonal and communication skills, with the ability to listen, engage and persuade, and to present complex information in an accessible way to a range of audiences.

E10 An ability to disseminate results and to contribute to research and commercial proposals.

E11 An ability to work as part of a team, through participation in collaborative projects, and developing evidence of leadership.

Application Procedure

Applicants are required to complete an application form including the name of three referees who will be contacted without further permission, unless you indicate that you would prefer otherwise. Applicants should also submit a Curriculum Vitae and a covering letter detailing the knowledge, skills and experience you think make you the right candidate for the job. Applicants should also complete the Equal Opportunities Monitoring Form.

Other Information

Further information on the application process and working at Strathclyde can be found on our website (<http://www.strath.ac.uk/hr/workforus>).

Informal enquiries about the post can be directed to Dr Ioannis Violatos, Materials Modelling Theme Lead (ioannis.violatos@strath.ac.uk).

Conditions of Employment

Conditions of employment relating to the Administrative and Professional staff category can be found at: [Conditions of Employment](#).

Rewards and Benefits

Our staff have access to a wide range of outstanding benefits that include financial rewards, family friendly and wellbeing benefits and career development opportunities, details of which can be found [here](#).

Probation

Where applicable, the successful applicant will be required to serve a 9 month probationary period.

Pension

The successful applicant will be eligible to join the Universities' Superannuation Scheme. Further information regarding this scheme is available from [Payroll and Pensions](#).

Equality and Diversity

We value diversity and welcome applications from all sections of the community.

The University currently holds a Bronze Athena SWAN award, recognising our commitment to advancing gender equality in academia across all academic disciplines and professional and support functions.

University Values

The University's Values capture what we're all about: who we are, what we believe in and what we stand for. [Our Values](#) have been derived from how we act and how we expect to be treated as part of Strathclyde.

