



Data Analyst

Department	National Manufacturing Institute Scotland (NMIS) (www.nmis.scot/)		
Faculty	Faculty of Engineering (www.strath.ac.uk/engineering/)		
Staff Category	Knowledge Exchange	Reference No	639392
Reports To	Data Analytics Theme Lead	Grade	7
Salary Range	£36024 - £44263	Contract Type	Open Contract
FTE	1 (35 hours/week)	Closing Date	20/10/2024
Holidays	31 days + 11 statutory days Option to purchase additional holidays.	On Site Facilities	Car parking, on-site shower facilities, reflection room.
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, on-campus nursery 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 is a leading international technological institution and has a long history of working with industry to deliver strong business growth from access to research and innovation expertise. The latest major initiative continuing to deliver on this track record is through the National Manufacturing Institute Scotland (NMIS).

As a magnet for innovation in advanced manufacturing, the National Manufacturing Institute Scotland (NMIS) group of specialist R&D centres (including the Digital Factory), supports manufacturing, engineering, and associated tech businesses of all sizes, to thrive domestically and internationally through accelerating productivity, embracing new digital technologies and achieving net-zero targets.

We turn smart ideas into reality and deliver ground-breaking research.

Coming from diverse backgrounds and disciplines, our passionate team works alongside industry, academia, and the public sector to solve problems, train the workforce of the future, and generate the creative ideas that will transform manufacturing.

Ultimately, we are growing the economy, developing a vibrant and skilled talent pool, and helping create prosperous, sustainable communities.

The National Manufacturing Institute Scotland (NMIS) is the future of manufacturing at the heart of the Advanced Manufacturing Innovation District Scotland. It is where industry, academia, and the public sector work together on ground-breaking manufacturing research to transform productivity levels, make companies more competitive and boost the skills of our current and future workforce.

Empowering autonomous decision-making within manufacturing enterprises, whether large corporations or small and medium-sized enterprises (SMEs), stands as a cornerstone of digital transformation. Central to this endeavour are decision support systems driven by algorithms rooted in statistical analysis, machine learning, and artificial intelligence. Crafting these algorithms necessitates a profound exchange of knowledge between manufacturing domain experts and iterative refinement through building, training, and validating data-driven models.

A solid understanding of machine learning algorithms is essential. Additionally, you will be expected to transform raw data into compelling visual narratives that support decision-making in the manufacturing industry. Your role will involve developing innovative visualization solutions to present manufacturing data in a clear and engaging manner. Collaborating closely with data scientists, engineers, and UX designers, you will turn raw data into visual insights that drive informed decision-making.

To tackle these challenges head-on, NMIS is actively seeking a proficient Data Scientist. This role will bridge NMIS, the University, and its industrial partners, facilitating robust knowledge exchange initiatives including collaborative research and development.

The ideal candidate will bring to the table research and/or technical expertise across several domains:

- Proficiency in statistical analysis, machine learning, and artificial intelligence methodologies as applied to industrial datasets.
- Competence in designing and managing diverse database structures (i.e. relational, non-relational)
- Expertise in data exploration, visualization, and the seamless integration of ground truth sources into training datasets.
- Craft dashboards and data visualisations that effectively communicate complex data insights to stakeholders.
- Experience in developing models on remote servers for subsequent deployment to edge devices or business intelligence systems.
- Collaboration prowess, adept at working within interdisciplinary teams comprising data scientists, engineers, and other technical specialists.

To be considered for this role, you will be educated to a minimum of PhD level in in Computer Science, Engineering, or Mathematics or be educated to a minimum of 2:1 Honors degree in addition to significant relevant experience within a relevant industrial environment. The post holder will also be able to work autonomously, plan and prioritise their own workload with guidance from a team / project leader, and deal with complex problems presented to them by colleagues. Preferably, the individual will have experience of project planning and delivery, excellent communication and interpersonal skills, and a proven ability to interact with a range of stakeholders from industry and/or academia. You will have an established track record in providing data analytics solutions in an industrial or research 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 be able to work as part of a multi-disciplinary team.

Job Description

Brief Outline of Job:

With guidance from the Data Analytics Theme Lead, you will contribute to the delivery of engineering projects and take responsibility for the delivery of research outcomes. You will be responsible for undertaking and supporting research and development relevant for the NMIS Data Analytics Theme (part of the Digital and Metrology Team) in the areas of data exploration, data/semantic model development, ML model development & validation, decision support systems and autonomous agent development for smart factory systems. You will be expected to contribute to the generation of proposals for creating research and commercial income that will enhance NMIS standing, capability and reputation. You will also be expected to deliver projects to time and within budget and provide project updates as required for the relevant Data Analytics Theme Lead, Digital and Metrology Team Lead, senior or programme management teams and customers/stakeholders. You will be expected to support business development activity at NMIS by various means including sharing specialist/expert knowledge, hosting guests/tours and demonstrating NMIS capability.

Main Activities/Responsibilities:

1.	Support the Data Analytics Theme Lead to develop data-driven decision support platforms for manufacturing based on connected data sources and efficient data operations.
2.	Plan and manage own workload, with minimal guidance from Theme/Team Lead as required.
3.	Lead on developing data-driven models within collaborative research & development projects, including training, testing, and validating models to support the manufacturing community and academia.
4.	Conduct research and knowledge exchange activities in manufacturing data analytics for smart factory systems to underpin decision support system development and autonomous agents for manufacturing environments.

5.	Maintain operational effectiveness through continual awareness of emerging and maturing data analytics approaches and paradigms.
6.	Enhance NMIS manufacturing capability by enabling greater usage of manufacturing datasets and to better inform the Data Analytics Theme of appropriate tools and technologies appropriate for NMIS research aims.
7.	Research standards and maintain ontologies and taxonomies relevant to manufacturing processes, materials, and product lifecycles.
8.	Prototype models based on acquired manufacturing process and inspection data to support internal NMIS teams, NMIS partners and external stakeholders in the manufacturing community.
9.	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.
10.	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.
11.	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 first degree (minimum class 2:1) in a relevant engineering, computer science, mathematical discipline, or equivalent relevant work experience.

E2 Significant experience or PhD in a relevant engineering, computer science or mathematical discipline

D1 Chartered Engineer/Scientist, Member of professional body in an appropriate discipline

Experience

E3 Knowledge of applied statistics, machine learning and artificial intelligence approaches and an understanding of the most appropriate methods for different applications

E4 Knowledge of creating, or integrating into, decision support platforms based upon model or algorithm outputs

E5 Experience of the following programming languages (and libraries) for applied data analytics: Python (pandas, scikit-learn, TensorFlow, PyTorch, NumPy/SciPy, matplotlib, seaborn)

E6 Experience of working with remote servers with GPU's using command line interfaces for data analysis applications (e.g. Jupyter Notebooks)

E7 Experience of programming version control software Git or equivalent

D2 Experience with any of the following container orchestration platforms: Kubernetes, OpenShift, Docker Swarm

D3 Experience of Microsoft Azure or Amazon Web Service platforms

D4 Experience of the following analytics engines: Apache Spark, Databricks, Snowflake or similar

D5 Experience in data visualisations software/libraries such as Panel, Retool, D3.js

Job Related Skills and Achievements

E8 Demonstrate critical thinking and creative approaches to solving challenges found in manufacturing applications, including sparse, dirty or unlabelled data sources

E9 Ability to work and collaborate in multi-disciplinary teams with diverse backgrounds to identify issues that can be addressed through data analytics

E10 Ability to communicate technical subjects and results to a wide audience, including team members, industrial partners, non-technical staff, and other stakeholders

E11 Ability to take ownership of technical elements of projects and to lead data analytic themed workshops with different stakeholders

E12 Manage a challenging workload autonomously and efficiently

D6 Experience of multi/inter-disciplinary knowledge exchange and research

Personal Attributes

E13 Have an inquisitive nature and genuine desire to understand the manufacturing domain that developed analytical models and algorithms will support

E14 Maintain a professional and collegiate approach in all situations

Other Relevant Factors

E15 Interest in the latest developments related to data science, including new programming languages/libraries, data operations frameworks, relevant hardware & software, and an interest in the wider research landscape of NMIS

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 Sarini Jayasinghe, Data Analytics Theme Lead (jayasinghe.jayasinghe@strath.ac.uk).

Conditions of Employment

Conditions of employment relating to the Knowledge Exchange 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](#).

Relocation

Where applicable, the University offers a relocation package to support new employees who meet the eligibility criteria. The relocation package is offered as a contribution towards costs incurred, and is designed to be flexible, allowing staff to use the financial support available in the way that will be most helpful to them. Further details are outlined in the Relocation Policy.

Interviews

Formal interviews for this post will be held on a date to be confirmed.

Equality and Diversity

The University of Strathclyde is a socially progressive institution that strives to ensure equality of opportunity and celebrates the diversity of its student and staff community. Strathclyde is people-oriented and collaborative, offering a supportive and flexible working culture with a deep commitment to our equality, diversity and inclusion charters, initiatives, groups and networks.

We strongly encourage applications from Black, Asian and minority ethnicity, women, LGBT+, and disabled candidates and candidates from lower socio-economic groups and care-experienced backgrounds.

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.

