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University of Strathclyde Glasgow

# KTP Associate: Data Analytics and Machine Learning for Internet of Things (IoT)

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|---|---|---|---|
| Department | Design, Manufacture and Engineering Management (www.strath.ac.uk/engineering/designmanufactureengineeringmanagement/) | | |
| Faculty | Faculty of Engineering (www.strath.ac.uk/engineering/) | | |
| Staff Category | KTP | Reference No | 405179 |
| Reports To | Jorn Mehnen (Academic Supervisor), David Hare (Company Supervisor) | Grade: | RS79 |
| Salary Range: | Starting salary £32,000 pa. (Competitive performance-based salary review) plus £5,000 training and development budget | Contract Type: | Fixed Term (21 months) |
| FTE | 1 | Closing Date | 01/06/2022 |

## Job Advert

The Department of Design, Manufacture and Engineering Management in partnership with Bosch Rexroth Limited (www.bosch.co.uk) are seeking to appoint a Knowledge Transfer Partnership (KTP) Associate in the area of Digital Manufacturing, with a focus on Signal processing, Data Analytics and the Industrial Internet of Things.

Bosch Rexroth Ltd, a UK registered wholly owned subsidiary of Bosch, provides economical, precise, safe and energy efficient technologies for driving, controlling and moving. The Bosch Rexroth plant at Glenrothes is the only Bosch plant that makes Radial Piston Motors for hydraulic applications, which are supplied worldwide. The site employs 400 staff and is responsible for product design, development, manufacture, assembly, testing and servicing.

The position offers the Associate the following benefits:

- a challenging and rewarding job with responsibility
- competitive performance-based salary review
- a planned programme of training courses, including a £5,000 personal development budget
- mentoring from experienced industrial and academic supervisors
- the support and resources of the University of Strathclyde
- the possibility of registering for a higher degree with the University
- the potential for good career development with the company at the end of the scheme
- developing and proving expertise in the prospering fields of Data Analytics, Internet of Things and Digital Manufacturing
- the opportunity to make important and tangible improvements in a large and dynamic company with a world-renowned brand name.

The post will be predominantly based at the company premises in Glenrothes (near Edinburgh) with potential visits to end users of the Radial Piston Motors worldwide and Strathclyde University Campus.

The project is part of the Knowledge Transfer Partnership (KTP) programme that aims to help businesses improve their competitiveness and productivity through better use of knowledge, technology and skills that reside within the UK knowledge base. Successful Knowledge Transfer Partnership projects are funded by UK Research and Innovation through Innovate UK and are part of the government's Industrial Strategy. To find out how KTP works and the vital role you will play if you successfully secure a KTP Associate position please visit: www.ktpws.org.uk

To be considered for the role you will be educated to a minimum of Degree level in Computer Engineering or Manufacturing

Engineering with computing experience. You will be skilled in the application of data analytics in product/process/service performance, have experience in the design and development of cloud-based/fog-based systems, experience of design and development of smart products/processes/services, experience of sensor application and Industrial IoT technology and experience in Digital Manufacturing, and some experience of working in industry. You will be self-directed and self-motivated, with the ability to project manage with guidance, as required, and you will have excellent communication skills with the ability to interact with a range of stakeholders and excellent negotiation skills with the ability to engage others.

Whilst not essential for the role, applications are welcomed from candidates with a Masters in a relevant discipline, and industry experience in IoT, smart technology or condition monitoring.

Please note, relocation to the site, The Bosch Rexroth plant at Glenrothes, would be required for this role.

# Job Description

**Brief Outline of Job:**

Supported by the academic team at the University of Strathclyde, the KTP Associate will focus on the development and implementation of a fully functional IIoT solution for Bosch Rexroth Ltd in Glenrothes. The development will be able to build upon and extend the technological ecosystems of Bosch. The Associate will need to manage the dynamic and evolving concepts of real-time signal collecting and processing and Industrial IIoT in harsh industrial environments. The Associate and the academic team will introduce the latest state-of-the-art technologies to staff across Bosch Rexroth. Stakeholder management will be key to the initial and long-term success – consulting with various business units from across Bosch, including the Bosch Rexroth's IoT team, Radial Piston Motor manufacture and condition monitoring unit, the Bosch Cloud analytics team, Bosch Rexroth IT, as well as marketing, customer relationship, and the information security teams. The OEM customers as well as the end user of the Radial Piston Motor will shape the development of the new system and processes. The Associate will also contribute to the knowledge base through training workshops and reports which will be the basis for journal publications and lecture material. Consistent reference to literature and uses of academic and industry expertise will ensure best practice and successful delivery.

**Main Activities/Responsibilities:**

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| 1. | Lead, design, develop and implement the IIoT solution for MCR Piston Motor |
| 2. | Develop an IIoT solution that creates value in the Bosch Rexroth ecosystem which is scalable, sustainable and integrated with existing operations. |
| 3. | Develop a workshop and training programme |
| 4. | Develop a Bosch Rexroth, OEM, MCR end user and academic stakeholder network for maintaining useful and efficient communication between all parties. This includes also writing regular reports for the stakeholders. |
| 5. | Prepare conference and journal articles related to the KTP |
| 6. | Engage in continuous professional development within the University and Company as appropriate |
| 7. | Completion of KTP Associate Final Report by the required deadline. |

# 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)

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| E1 | BEng degree in Physics, Electrical Engineering, or Manufacturing Engineering with Computing |
| D1 | MEng degree in Physics, Electrical Engineering, or Manufacturing Engineering with Computing |

**Experience**

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| E2 | Application of Data analytics in product/process/service performance (signal processing) |
| E3 | Design and development of cloud-based/fog-based solutions |
| E4 | Experience in the application of Sensor and IIoT technology |
| D2 | Design and development of smart product/process/service (AI/ML) |
| D3 | Experience of working in industry, specifically looking at IIoT, smart technology or condition monitoring |

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| **Job Related Skills and Achievements** | |
| E5 | Cloud computing |
| E6 | Signal processing with data analytics |
| E7 | Experience of algorithm development and software development for IIoT and the Cloud |
| E8 | The ability to independently project management, with guidance as required |
| D4 | The ability to contribute to journal papers |
| D5 | Good customer relationship management |
| **Personal Attributes** | |
| E9 | Self-directed and self-motivated |
| E10 | Good attention to detail |
| E11 | Excellent communicator, with the ability to engage with a range of stakeholders |
| D6 | Strong interpersonal skills, including negotiating, influencing and network building |
| D7 | Desire to lead |
| D8 | Awareness of commercial drivers |
| D9 | Proficient in technical writing/presentation |

## Application Procedure

Applicants are required to complete an application form including the name of three referees who will be contacted before the interview 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 Professor Jorn Mehnen (jorn.mehnen@strath.ac.uk).

### 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.

### Conditions of Employment

Conditions of employment relating to the KTP staff category can be found at: Conditions of Employment.

### Probation

Where applicable, the successful applicant will be required to serve a 6-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

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.


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