

# KTP Associate-Robotics Engineer

Department	Design, Manufacture and Engineering Management ( <a href="http://www.strath.ac.uk/engineering/designmanufactureengineeringmanagement/">www.strath.ac.uk/engineering/designmanufactureengineeringmanagement/</a> )		
Faculty	Faculty of Engineering ( <a href="http://www.strath.ac.uk/engineering/">www.strath.ac.uk/engineering/</a> )		
Staff Category	KTP	Reference No	342435
Reports To	Erfu Yang (Academic Supervisor), David Bradley (Company Supervisor)	Grade:	RS79
Salary Range:	Starting salary £34000 p.a. plus £4000 training and development budget	Contract Type:	Fixed Term (24 months)
FTE	1	Closing Date	07/02/2021

## Job Advert

The Department of Design, Manufacturing and Engineering Management (DMEM) in partnership with TrainFX Ltd. ([www.trainfx.com](http://www.trainfx.com)) is seeking to appoint a knowledge Transfer Partnership Associate in the area of Mobile Robotics, with a focus on the development of an autonomous and interactive station robot/rover (AI-STAR), coupled with an interactive PIS (Passenger Information System) to provide a bespoke, high-quality passenger service at stations.

TrainFX Ltd. is a UK based, specialist rail technology company, providing bespoke, turn-key and fully integrated on-train solutions. Its products include a Passenger Information System (PIS), Crew Comms, Call for Assistance, Seat Sensors, CCTV and Passenger Counting for both retrofit and new-build trains. It operates as a trusted partner for the rail industry supplying its bespoke engineering solutions and Information Technology solutions to customers (e.g. Ricardo Rail, Scotrail, Great Western Railway and Transport for Wales).

The position offers the KTP Associate the following benefits:

- an exciting and rewarding job opportunity
- a planned programme of training courses, including a £4000 personal development budget
- mentoring from experienced industrial and academic supervisors
- the support and resources of the University of Strathclyde
- the possibility of registering study for PhD degree with the University of Strathclyde if the Associate has not obtained one.
- the potential for good career development with the company at the end of the project
- developing and proving expertise and skills in the prospering fields of robotics
- the opportunity to make important and tangible contributions in a growing company

You will be employed by the University of Strathclyde, but will be predominantly based at the company premises in Derby, working directly with senior company staff, as well as receiving additional mentoring support from expert staff at the University of Strathclyde.

The project is part of the Knowledge Transfer Partnership (KTP) programme that aims to help businesses to improve their competitiveness and productivity through the 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](http://www.ktpws.org.uk).

To be considered for the role you will be educated to a minimum of MSc Degree level in Robotics/Mechatronic Systems with relevant industry experience in this area. You will be skilled in analysing, designing and developing robotic systems and AI

algorithms within a dynamic business/academic environment, have experience in the design and development of key robotic system modules and their system integration, experience of technical writing, preparation and delivery of user training, and some experience of working in industry such as railway transportation. You will be self-directed and self-motivated, with the ability to project management with guidance, as required, and you will have excellent communication skills with the ability to interact with a range of stakeholders and excellent skills with the ability to engage with others from both academia and industry.

Whilst not essential for the role, applications are welcomed from candidates with a Master degree in other relevant disciplines such as computer science, electronic engineering with industry experience in robotics and autonomous systems.

## Job Description

### Brief Outline of Job:

Supported by the academic team at the University of Strathclyde and the industrial team at TrainFX Ltd., the KTP Associate will focus on the development and implementation of the AI-STAR: a robot that is able to autonomously move safely around a train station and interact with customers, including those with reduced mobility/non-English speakers, allowing for a better user experience and more efficient station. The development will also be able to integrate and extend the commercial Passenger Information System (PIS) of TrainFX Ltd. in order to deliver a strategic step change in its current operations and allow the company to continue growth with a market leading product. The KTP Associate under the supervision and support from the academic team at the University of Strathclyde will be conducting the knowledge and expertise transfer in a number of key areas including robotics and AI/Machine learning techniques and their applications to this KTP project. The Associate will also contribute to the knowledge base through technical reports, publications in journals and conferences, presentations at workshops and seminars etc.

### Main Activities/Responsibilities:

1.	Leading, designing, developing and implementing the AI-STAR rover system.
2.	Developing a robot interface that is able to interact with humans and read emotion through Natural Language Processing (NLP), as well as additional sensing techniques required.
3.	Developing AI and ML algorithms to allow the AI-STAR to 'learn' with each human interaction, allowing the robot to continually improve its customer service.
4.	Developing the AI-STAR rover system that is capable of moving safely in a busy, station environment. (i.e. dynamic environment perception, confined space path planning).
5.	Integrating the commercial Passenger Information System (PIS) of TrainFX Ltd. with the AI-STAR.
6.	Testing the developed AI-STAR rover system in both lab and field experiments (train stations).
7.	Preparing progress reports, attending and presenting at project meetings with KTP adviser and supervision team.
8.	Preparing conference and journal publications related to this KTP project.
9.	Engaging in continuous professional development within the University and Company as appropriate.
10.	Completing the KTP Associate's 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)

E1 MSc in Robotics/Mechatronic Systems with relevant industry experience in this area

D1 PhD degree in Robotics and Autonomous systems or Computer Science.

D2 Professional qualifications

D3 Business qualification (either separate or as part of degree course)

### Experience

E2 Experience of robot development/computer programming

E3 Experience of system integration challenges and approaches

E4 Experience of implementing AI and machine learning algorithms

D4 Experience of implementing Natural Language Processing (NLP) techniques

---

D5 Relevant industry experience of working in cross disciplinary team

---

### **Job Related Skills and Achievements**

E5 Ability to analyse, design and develop robotic systems within a dynamic business/academic environment

---

E6 Excellent technical writing, preparation and delivery of user training

---

D6 Excellent numerical and computational skills

---

E7 Excellent algorithm development skills

---

D7 Excellent organisational and communication skills

---

### **Personal Attributes**

E8 Ability to work independently, self-motivated and with multi-skilled teams

---

E9 Excellent communicator, with the ability to engage with a range of stakeholders

---

D8 Desire to develop commercial and business experience

---

E10 Strong interpersonal skills, including negotiating, influencing and network building

---

E11 Good attention to detail

---

E12 Awareness of commercial drivers

---

## **Application Procedure**

---

Applicants are required to complete an application form including the name of three referees who will be contacted before 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 Dr Erfu Yang, Lecturer ([erfu.yang@strath.ac.uk](mailto:erfu.yang@strath.ac.uk)).

### **Conditions of Employment**

Conditions of employment relating to the KTP 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 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](#).

### **Interviews**

Formal interviews for this post will be held on 15/02/2021.

### **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 women's careers in science, technology, engineering, maths and medicine (STEMM) employment in academia.

**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.

