

Developer for Automated Imaging System (KTP Associate)

Department	Electronic and Electrical Engineering (www.strath.ac.uk/engineering/electroniclectricalengineering/)		
Faculty	Faculty of Engineering (www.strath.ac.uk/engineering/)		
Staff Category	KTP	Reference No	329404
Reports To	Professor Stephen Marshall (Academic Supervisor); Chris White (Company Supervisor)	Grade:	7
Salary Range:	Up to £34k p.a. plus £4k training and development budget	Contract Type:	Fixed Term (24 months)
FTE	1	Closing Date	11/04/2021

Job Advert

The Department of Electronic and Electrical Engineering in partnership with EventMap Ltd (www.eventmapsolutions.com/) is seeking to appoint a Knowledge Transfer Partnership (KTP) Associate focussing on image processing algorithm development.

The Role

This is an exciting opportunity for an ambitious individual to kick-start their career with industry as part of a Knowledge Transfer Partnership (KTP). The Associate will be working with EventMAP to develop new visualisation tools for their software products and to further their work in the emerging area of utilisation and Space Management. The project aims to demonstrate that embedding an optical based sensor system into EventMAP's current utilisation solution will drive innovation and allow rapid development to meet the needs of our core sectors.

The position is funded through the acclaimed Knowledge Transfer Partnerships (KTP) scheme which is a government-supported initiative, enabling graduates (KTP Associates) to work on exciting and challenging projects in a partnership between a business and a university. This is an opportunity to fast track your career by delivering a strategic project that has the potential to transform the business.

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

EventMAP

EventMAP develop cutting-edge software and consultancy packages for timetabling, scheduling, resourcing and space planning for academia and large-scale organisations. Our solutions are designed to provide powerful, flexible tools that can help create significant increases in operational efficiency and our clients include several of the world's leading universities, as well as an ever-expanding number of large commercial and public sector organisations.

Throughout Eventmap's recent exponential growth phase, utilisation studies have been carried out across all the major sectors service using staff to 'count' people in rooms occupied in specific activities. It is notable that additional business has not been captured based on the perceived 'antiquated' approach to collecting this occupancy data i.e. new Companies have entered the market using physical sensors to capture this information. To ensure we continue to provide market leading products and services and continue our growth trajectory, we recognise the need for an innovative approach to the capturing of occupancy

data as part of the utilisation survey. The optical based sensor system fine-tuned and developed in this project would be both innovative and revolutionary within the industry and for our business.

University of Strathclyde

The University of Strathclyde has developed a prototype system for monitoring room occupancy in a teaching environment by deploying a series of IP cameras. The pictures from the cameras are processed by image processing algorithms to count the number of people in each class using techniques based on deep learning. The successful candidate will have the opportunity to take this existing system through to product with EventMAP. The algorithms may require further refinement in challenging environments. The project will require you to work with Timetabling, Estates, Senior IT staff and operational IT technicians to develop robust operating protocols to make the system transferable to new academic and non-academic institutions.

The system will be embedded within the existing products of EventMAP and you will be expected to assist in the business development and marketing of these products.

You will be employed by the University of Strathclyde but will spend most of your working time at the company's premises in Belfast, Northern Ireland. A key feature of the KTP position is a personal training and development allowance of £4,000 that you can use to develop skills related to the project that will help you to advance your career as a software and algorithms professional. You will also have the opportunity to register for a research degree based on the work carried out on the project. The test bed system is based at the University of Strathclyde, you will therefore be required to spend several weeks, spread over the two years, in Glasgow working on refining and evaluating the system there.

To be considered for the role you should have the demonstrable skills to address both a technically challenging programming/product design role, as well as business development role for the product with the company and excellent people skills.

There is a potential for a role to be offered by EventMAP following the completion of the KTP project.

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. There are over 200 vacancies currently available at www.ktp-uk.org/graduates or search 'KTP jobs'.

Job Description

Brief Outline of Job:

An existing people counting system based on cameras and software processing has been developed at University of Strathclyde. The role of the KTP associate is to take this existing system through to an embedded enhancement within the EventMAP space utilisation software products. The position will involve understanding the existing system, modifying where necessary and addressing the practicalities of implementing this system in more challenging environments. It will require the development of operating protocols and documentation as well as comparisons with existing systems. The system will then be added to the existing systems developed by EventMAP. Finally, it will involve a business development role in identifying new and emerging markets for the product and adapting it accordingly.

Main Activities/Responsibilities:

1.	Obtaining a comprehensive understanding of the existing deep learning people counting system
2.	Evaluating and refining the existing system software by programming GPUs and retraining algorithms
3.	Liaison with University IT, Timetabling and Space Utilisation staff to ensure integration of system with existing processes
4.	Preparation of technical documents outlining standard operating procedures
5.	Familiarisation with the current EventMAP product portfolio
6.	Interfacing and embedding of the system with EventMAP software products
7.	Identifying new markets and exploiting opportunities for these software products

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 Degree in Computer Science, Electronic Engineering/Software Engineering or a similar science / engineering discipline

D1 Business qualification (either separate or as part of degree course)

Experience

E2 Experience of implementing Computer Vision and Image Processing Algorithms

D2 Experience of working in cross disciplinary team

D3 Marketing experience involving software and technical products

D4 Deep Learning experience

Job Related Skills and Achievements

E3 Proficient in developing software applications in C#, ASP.NET MVC/WebAPI, Entity Framework, MS-SQL Server, JavaScript, and common frontend JavaScript libraries such as React, Backbone and Angular

E4 Have experience in object-orientated software design principles, a working knowledge of Continuous Integration and experience writing unit tests and using TDD.

E5 Excellent analytical and problem-solving skills

D5 Experience of implementing Deep Learning systems using GPUs

E6 Strong organisational skills to plan whole system implementation

Personal Attributes

E7 Willingness to acquire business skills and learn strategic thinking

E8 The ability to liaise with Timetabling, Estates, Senior IT staff and operational IT technicians

E9 Excellent communication skills, oral written, presentational

E10 Customer liaison skills to understand their needs and reflect that within product

Other Relevant Factors

E11 Flexibility to work in Belfast and Glasgow

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 Professor Stephen Marshall (stephen.marshall@strath.ac.uk).

Conditions of Employment

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

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 23/04/2021.

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 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.

