

KTP Associate: Embedded Image Processing Systems Engineer, in association with Peacock Technology

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| Department | Electronic and Electrical Engineering (www.strath.ac.uk/eee/) | | |
| Faculty | Faculty of Engineering (www.strath.ac.uk/engineering/) | | |
| Staff Category | Research | Reference No | 16851 |
| Reports To | The Head of Department, through Dr Louise Crockett (Academic Supervisor) and Mr Anthony McMahon, (Industrial Supervisor) | Grade: | RS79 |
| Salary Range | £22-28k (depending on previous experience), plus £4k training budget | Contract Type | Fixed Term (24 months) |
| FTE | 1 | Closing Date | Thursday, 20 August 2015 |

Job Advert

The University of Strathclyde has an established record of collaboration with industry partners, including local Small to Medium Enterprises (SMEs). The Department of Electronic & Electrical Engineering is pleased to be partnering with Peacock Technology Ltd. on a Knowledge Transfer Partnership (KTP) project in the area of embedded image processing systems.

Peacock Technology is an engineering consultancy specialising in electronic, software, and mechanical design, based in Stirling, Central Scotland. As well as providing consultancy services, Peacock also has an increasing focus on own-product development. The KTP project will support product development by focusing on embedded image processing and vision techniques for 3-dimensional imaging, and the development of time-of-flight camera technology. The project will involve the entire process from research and development, implementation and integration, to testing, manufacturing, and product launch.

KTP is a three-way collaboration between an Associate, a Company, and a University (for further information, see: <http://www.ktpws.org.uk>). The Associate undertakes and manages a strategic project for the company, while being supported by Academic and Industry supervisors. As part of the KTP, the Associate benefits from management training opportunities and a further budget of £4,000 for personal development. Opportunities also exist to develop research papers and to engage in the academic community at Strathclyde. The successful candidate will also be able to register for a higher degree (normally an MPhil) during the KTP project. At the end of the 2 year partnership, there may be an employment opportunity for the Associate with the company.

To be considered for this role, you will be educated to a minimum of Bachelor's Degree level in a relevant engineering discipline (such as Electronic & Electrical Engineering, Computer Systems Engineering or equivalent). You will have relevant experience in embedded systems development and you will demonstrate an enthusiasm for this role, be adaptable and have excellent project management and technical communication skills.

Whilst not essential for the role, applications are welcomed from candidates with a relevant Master's Degree or PhD, or from candidates with relevant industrial experience.

Please note that the post will be based at Peacock Technology's premises: Alpha Centre, Stirling University Innovation Park, Stirling, FK9 4NF. This location is accessible both by car and public transport.

Please note that his post has previously been advertised. Previous applicants need not apply.

Job Description

Brief Outline of Job:

The role will involve technical research and product development activities, as well as project management, marketing and business analysis. As part of the KTP programme, there will also be two residential training modules and other similar opportunities.

The Associate will lead the development of the embedded image processing component of a time-of-flight camera product, with appropriate support from supervisors, and will be at the forefront of decision making. The Associate will utilise their technical skills to develop embedded systems for image processing, including algorithm development and evaluation, software coding, hardware implementation on a reconfigurable platform (Xilinx FPGA or Zynq-7000 device), operating system deployment and interfacing. There will also be involvement in the 'productionisation' phase, including costing, testing and liaison with manufacturing partners.

Business and management activities will include: taking responsibility for project planning, preparing reports and making presentations, financial planning, customer liaison, product documentation and marketing.

It is also expected that the Associate will participate in academic dissemination activities, such as co-authoring academic papers and preparing case studies. There may also be opportunities to work with and co-supervise Masters projects at the University on topics related to this project. The topic of this project has considerable potential to stimulate applied academic research.

Main Activities/Responsibilities:

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| 1. | Conduct research into the competitive landscape, opportunities and emerging trends in 3D camera technology. Analyse commercial opportunities and generate revenue projections. |
| 2. | Develop, integrate, and test an embedded image processing system for the time-of-flight camera, including software and hardware development, operating system support etc. |
| 3. | Investigate and evaluate algorithms for enhancing product functionality; progress from mathematical definition to simulation to embedded implementation. |
| 4. | Apply specialist knowledge to optimise implementations, e.g. hardware acceleration, partial reconfiguration techniques, and analyse results. |
| 5. | Plan and execute testing; analyse and report on results; drive necessary improvements. |
| 6. | Manage costing and manufacturing, and lead interactions with manufacturing partners. |
| 7. | Take responsibility for management of the project and reporting to senior company colleagues. |
| 8. | Produce full internal and external product documentation, user guide, data sheet etc. and conduct product demonstrations. |
| 9. | Conduct client liaison and marketing activities. |
| 10. | Engage in academic dissemination of the research results, e.g. conference / journal publications and case studies. |
| 11. | Prepare reports, deliver presentations to colleagues, and otherwise ensure that knowledge arising from the KTP project is embedded within the company. |

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. Educated to a minimum of Bachelor's / Master's degree level in Electronic & Electrical Engineering, Computer Systems Engineering or other relevant subject.

Experience

E2. Experience of software development environments and Linux.

E3. Knowledge and experience of embedded systems design.

D1. Experience with Xilinx FPGAs and/or SoCs, and associated design tools.

D2. Familiarity with software development tools for image processing and computer vision.

D3. Knowledge of ARM® processors.

D4. Experience of collaboration / team-working on technical projects.

D5. Project management experience.

- D6. Experience of working on a commercially focussed project(s).
- D7. Experience of embedded systems, which may include architectures, memory interfacing, and operating systems.

Job Related Skills and Achievements

- E4. Skills in software development (C, C++ etc.)
- E5. Technical communication skills (reports, presentations etc.).
- D8. Practical skills and experience with the Linux operating system.
- D9. Practical skills in FPGA and/or SoC design (e.g. VHDL and/or Verilog, Xilinx ISE / Vivado, block-based design, synthesis and verification tools and methods.)
- D10. Awareness of image and video processing techniques.
- D11. Awareness of image and video processing standards and file types.
- D12. Practical skills with image processing / computer vision development software, e.g. OpenCV, MATLAB and Simulink, Halcon.
- D13. Practical development experience with ARM processors.
- D14. Practical experience of implementing embedded image and video processing systems.

Personal Attributes

- E6. Personable with the ability to build positive professional relationships with colleagues, clients and other stakeholders.
- E7. An open-minded and adaptable approach, with a willingness to expand skillset as needed.
- E8. The ability to work under pressure, prioritise, and adapt to changing objectives or circumstances.
- E9. Strong analytical skills and attention to detail.
- E10. Excellent problem solving abilities.
- E11. The ability to make decisions, influence others, and take a lead on the project.

Application Procedure

Applicants are required to complete an application form including the name of three referees who will be contacted before interview without 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>).

Further information about the KTP programme can be obtained from: <http://ktp.innovateuk.org/graduate-opportunities>.

Informal enquiries about the post can be directed to Louise Crockett, Teaching Fellow (louise.crockett@strath.ac.uk).

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 the week commencing 7 September 2015.

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.



Conditions of Employment

KTP Associates



1. GENERAL CONDITIONS

Members of staff are subject to the Charter and Statutes and the Ordinances and Regulations of the University, published in the Calendar, and to any amendments or additions thereto approved by the University Court and, in the case of the Charter and Statutes, Privy Council.

The University Court recognises the Strathclyde University and Colleges Union (SUCU) as the sole body with which it will negotiate and consult on all collective issues concerned with the terms and conditions of employment of Research staff. Such terms and conditions may be varied by the University Court after negotiation and consultation with SUCU.

Further information on the terms and conditions specified in this document is contained in the Staff Handbook, which also includes further details of such conditions as provision for sick/injury leave and pay, leave of absence, holidays and holiday pay, individual grievance procedures, review and disciplinary procedures and collective agreements. Should you not receive a copy of the handbook on appointment a reference copy is accessible by visiting Human Resources.

2. CONTINUOUS SERVICE

In the case of new appointments, unless otherwise stated in the letter of appointment, the date of continuous employment for the purposes of statutory employment rights will be taken to be the date of appointment contained therein. In the case of promotions, regradings or transfers, previous service is continuous.

3. ALLOCATION OF POST

The post to which each member of staff is appointed is allocated to both the University Department and/or other area(s), and the Company Partner named in the member's letter of appointment and any accompanying papers. Should the University Court and/or the Company Partner deem it necessary, in the furtherance of the objectives of the University (specified in its Charter) and/ or the objectives of the Company Partner, they shall, having consulted with the parties concerned and having received the advice of the Senate, re-allocate the post and/or the duties pertaining partially or wholly to it to another University department or area and/or to another Company Partner Department or to an associated Company. Any such re-allocation will be without prejudice to the other conditions of employment of the holder.

If the need arises during the course of employment for members of staff to work outside the U.K. for a period (or periods) of more than one month then such arrangements will be subject to mutual agreement. Members of staff would then be provided with a statement in advance setting out the terms covering such periods of employment.

4. RESPONSIBILITY AND SERVICE

The University is committed to ensuring that its business is conducted in an open and transparent manner and will take all appropriate steps to address risks of bribery or corruption. Members of staff are required at all times to act honestly and with integrity and to safeguard the resources for which they are responsible. The University has in place a robust Public Interest Disclosure (Whistleblowing) Policy to enable concerns to be brought to its attention. This is available at <http://www.strath.ac.uk/publicinterestdisclosure/>. Other relevant policies, e.g. Fraud Prevention and Conflicts of Interests can also be found on the University's website.

Each member of staff is responsible for the proper performance of allocated duties to the person or persons specified in the member's letter and any accompanying papers. Unless otherwise indicated

5. WORKING TIME

Working time is that required to fulfil the duties of the post and members of staff are expected to comply with the general working pattern of the KTP Company Partner. Further details in relation to working hours will be provided within the offer of employment and/or by the Company Partner on commencement of employment.

6. HOLIDAYS

Entitlement to accrue paid annual holiday will apply from the date of commencement and the accrual rate will be as per the provisions of the KTP Company Partner, Public Holidays will only apply where they are observed by Company Partner and it may be that these have to be taken from the annual leave entitlement where the Company does not apply a separate entitlement in this regard. Where Public Holidays are not observed by the Company Partner, these days may still be taken from the annual holiday entitlement, subject to authorisation. In cases where the Company Partner operates a period of annual closedown, these days may count against the accrued annual holiday entitlement, subject to the normal practices of the Company Partner. Further details and arrangements for requesting leave will be confirmed within the Offer of Employment and/or by the Company Partner on commencement of employment.

7. SICK LEAVE

During any period of absence through illness or injury provided the appropriate medical certificates are received the University will pay a member of staff (having taken account of the aggregate of all periods of absence due to illness during the twelve months immediately preceding the first day of the current absence) as follows:

| Period of Continuous Employment at start of absence from work | Full Pay | Half Pay |
|--|-----------------|-----------------|
| Less than 1 year | 1 month | 1 month |
| 1 year but less than 2 years | 2 months | 2 months |
| 2 years but less than 3 years | 4 months | 4 months |
| 3 years but less than 5 years | 5 months | 5 months |
| 5 years or more | 6 months | 6 months |

In order to manage the University's sick pay scheme the University requires to maintain sickness absence records on individual members of staff. When making payments after the expiry of statutory sick pay the University will deduct an amount equivalent to any benefit normally payable by the Department of Health and Social Security. For this and other details see staff handbook.

8. SALARY AND SUPERANNUATION

Salaries are payable monthly by means of a credit transfer to a specified bank account.

New members of staff, under age 75, will be admitted to membership of the Universities' Superannuation Scheme on taking up appointment unless they notify the University in advance, at the point of signing their offer letter, that they do not wish to be admitted to membership of USS. USS requires a contribution from the member (currently 6.5 per cent of salary for the Career Revalued Benefits section of the scheme and 7.5% for the Final Salary section of the scheme), to which a contribution of salary is added by the University as required by USS. If a new member of staff has previously been a member of USS and rejoins the scheme on or after 1 October 2011 they will be eligible to rejoin the Final Salary section of the scheme if they:

- left before 1 October 2011 and have deferred benefits in USS and are rejoining before 1 April 2012; or
- leave the Final Salary section after 30 September 2011 and rejoin the scheme within 30 months of leaving.

New members of staff may opt out of USS within three months of taking up appointment when they will be treated as if they had never been members. After three months members of staff who wish to withdraw from USS during their employment will be required to give a minimum of 28 days' notice in writing to the University. Any member of staff who wishes to opt out should contact the Pensions Section in the first instance.

A new employee's guide to joining USS is issued with the offer letter. Full details of the Scheme are available for reference purposes at the Pensions Section of Finance Office, John Anderson Campus.

9. PLACE OF RESIDENCE

The University does not normally place specific restrictions upon the place of residence of members of staff. They are, however, expected to reside in a location which is compatible with the satisfactory fulfilment of all the duties associated with their appointment and with membership of the academic community.

10. PERIOD OF EMPLOYMENT

Members of staff are employed on the conditions indicated in individual letters of appointment and any accompanying papers. The University is not obliged to give notice of termination or continue any employment beyond the end of the fixed term period. Where the period of the contract of employment is for one year or less it may be terminated short of the fixed term period by 1 month's notice on either side. Where the period of the contract of employment is for more than one year, or where there have been a further contract or series of contracts immediately consecutive, the employment may be terminated short of the fixed term period by 3 months' notice on either side.

Revised September 2011