UNIVERSITY OF LIVERPOOL

In association with Racewood Ltd

KTP ASSOCIATE

Job Ref: R-571604

Department: Computer Science

Salary: £22,350 pa

Tenure: 2 years

Location: Racewood Ltd, Tarporley, CW6 0AN

Hours of work: Full-Time

Closing Date: 1 March 2010

Interview Date: Tuesday 26 March 2010

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**Informal enquiries to Frans Coenen, email: Coenen@liv.ac.uk or
William Greenwood, email: info@racewood.com**

Application Procedure
Applications should comprise:
*A completed **applicant information form**
* A copy of your **full curriculum vitae**
*A statement indicating the reasons for applying for this post and how your training and experience is relevant.
If you have any particular requirements should you be invited to interview, please make this clear in your application.

Submitting Applications
Applications may be submitted by e-mail to jobs@liv.ac.uk or by post or in person to: The Director of Human Resources (Recruitment), The University of Liverpool, Hart Building, Mount Pleasant, Liverpool L3 5TQ

ROYAL MAIL – Postal Pricing System. Please ensure that postal applications carry the correct postage according to the weight and measurement of the item, as items with insufficient postage will be held and delayed by the Royal Mail. Details of their pricing system are available online at www.royalmail.com or from a Post Office branch.

Acknowledgement of Applications
Please note that we are unable to acknowledge postal applications. If you would like an acknowledgement please enclose a stamped addressed card or envelope, and place it at the front of your application. If you e-mail your application you will receive an automated acknowledgement.

Shortlisting and Interviews
Shortlisting and interview arrangements are the responsibility of the recruiting Department.   Please contact **Frans Coenen, email: Coenen@liv.ac.uk** if you have a query after the closing date.

Outcome of Applications
Vacancies at the University often attract a large number of candidates and it is not always possible to respond individually to every application. If you have not heard from the recruiting Department by **mid April 2010** please take it that your application has not been successful.

POSITIVE ABOUT DISABLED PEOPLE

Asylum & Immigration

The University will comply with the Immigration, Asylum and Nationality Act 2006, which requires all employees to provide documentary evidence of their legal right to work in this country prior to commencing employment. Please be aware that you will be required to bring your passport (and visa if applicable) to interview so that it can be copied and verified by a member of the Selection Panel. For posts requiring a recognised degree level or equivalent qualification, and where there is no suitable UK or European Economic Area candidate, the University will take the necessary steps to secure UK Border Agency permission for a foreign national to take up employment.

Should a candidate require a Certificate of Sponsorship in order to take up a post they will need to meet the UK Boarder Agency Tier 2 Points Based Criteria. A self assessment tool can be found on the UK Border Agency website at: www.ukba.homeoffice.gov.uk/pointscalculator

A candidate may also be required to undertake an English Language test prior to commencing work at the University. Details of Home Office approved tests can be found at: www.ukba.homeoffice.gov.uk/sitecontent/newsarticles/pbsapprovedenglishlanguage

Further information on the eligibility criteria for Certificates of Sponsorship can be found at: www.ukba.homeoffice.gov.uk/employers/points

Diversity and Equality
The University of Liverpool is committed to diversity and equality of opportunity. All employees and applicants for jobs will be considered on their abilities and will not be discriminated against on the grounds of age, caring responsibilities, colour, disability, employment status, gender, gender identity, marital status, nationality, race or ethnic origin, religion or belief, sexual orientation, socio-economic status or any other irrelevant distinction. Training is available to support career progression within the University.

Two Ticks Disability : Guaranteed Interview Scheme (GIS)
The University of Liverpool is commitment to the employment of disabled people, and as part of our commitment, we guarantee to interview all disabled applicants who meet the essential criteria for a post and consider them on their abilities.

To apply for a post under the disability GIS, you must disclose your disability (as defined by the Disability Discrimination Act, 2005), and mark **X** in the **yes** box on the Equal Opportunities Employment Form. This form **must** be returned with your application form. Full details of the scheme are available at www.liv.ac.uk/hr/organisational-development/Two_Ticks.htm

Accessibility

If you require copies of documentation in alternative formats, for example, large print or Braille, please contact jobs@liv.ac.uk or telephone 0151 794 6771.

If you have any other requirements which will help you access the application or interview process or employment opportunities at the University of Liverpool, please let us know by contacting jobs@liv.ac.uk or telephone 0151 794 6771.

Smoking

The University has adopted a Code of Practice on Smoking, copies of which are available from the Human Resources Department website www.liv.ac.uk/hr

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1.   We are looking for a high calibre individual with a 2:1 honours degree in Computer Science or a closely related subject (such as information technology, e-Commerce, Web programming etc.) or (ii) an MSc in an appropriate branch of IT, to work on a strategic commercial Knowledge Transfer Partnership (KTP).

2.   **Programme of Work**

The overall objective is to introduce and embed core software skills into the company enabling the design and development of new and advanced equine simulators and online services. A two year programme of work is envisaged comprising eight stages as follows:

a) **Basic Familiarization.** The programme will commence with the necessary background work to allow familiarization with Racewood's equine simulator product. Currently Racewood supply three types of equine simulator: (i) general (for example dressage training), (ii) racing and (iii) polo. All are designed for use by professionals. The simulators have been developed using Adobe Director and thus preliminary familiarisation of this software will be required. The overall aim of the KTP is to: (i) extend the range of simulations available (Show Jumping, Steeple Chase, Cross Country) and (ii) introduce and embed core software skills into Racewood Ltd. so that software production and maintenance can be conducted "in house". Currently software development is conducted by a third party. The initial basic familiarisation stage will include a brief placement with this provider.

b) **Simulator Operation.** The Associate will undertake a detailed study of the operation of the dressage and racing simulators including: loading of software, incorporation of new features, the nature of the hardware/software interface, software and fault analysis and remediation. The Associate will design, implement, test and evaluate the software to react to 'saddle sensor' input. Currently the 'horse' does not interact to changes in the position of the rider.

c) **Arena Show Jumping Simulator (A-SJS).** A show jumping simulator is missing from the company product range; and would be a world first, of particular interest in the lead up to the 2012 Olympics. This simulator will be a challenge, since the electro-mechanical side (which the company will address) will be more complicated as the 'horse' will walk, trot, lean and jump; requiring the software to deal with substantially more sensor inputs than in other simulators. In the first phase the challenge will be restricted to jumps around a flat arena. The associate will undertake the development of the Arena Show Jumping Simulator (A-SJS), a new product for Racewood. This will be the principal deliverable of the KTP. The SJS will, in part, build on the jumping racehorse simulator that is expected to be completed with the support of the external software supplier at this point in the work plan. The development is covered by two project stages, each related to a commercial output in the form of a new product. The first (this project stage) will be directed at 'flat', arena based, show jumping scenarios (i.e. based around a course of a number of jumps). The development will commence with a requirements analysis and software specification, and proceed with implementation and testing.

d) **Cross Country Show Jumping Simulator (CC-SJS).** In this stage, the sophistication of the show jumping simulator will be extended by enabling it to follow and respond to the challenges of variations in natural terrain consistent with cross-country, as opposed to flat arena, show jumping. The second build of the show jumping simulator will be directed at cross country style events (such as that included in three-day eventing) where riders have to complete a course over natural terrain that includes obstacles (jumps) of various sorts. A similar development process will be followed by the Associate as for the 1st build, commencing with a requirements analysis, specification and design. Much of this work will be an extension to the work undertaken in (c).

e) **Side Screen Provision (SSP)**. The addition of two (extra) flat-screen TV side-screens will give the racing simulator, for example, a wrap-around riding experience that will increase the embedded realism of the racing simulation and will sell well in less price sensitive geographies. The provision of side screens is intended to complement the existing 'view'. This project stage will commence with the Associate undertaking a technical study to establish the hardware and software requirements for the provision of side screens. (For example it is anticipated that additional graphics cards will be required). This work package will culminate in a technical report. The Associate will identify, negotiate, purchase, install and test additional hardware. The Associate will also extend current simulation software to produce additional views. Established Object Oriented approaches to design and implementation will be adopted together with traditional software engineering testing and evaluation strategies.

f) **Multi-Racehorse interaction**. The existing interactive (flat) racing simulator engages a field of six horses in rule-based interactions that enable a competitive 'race' with outcomes that depend on jockey behaviour. There is market demand for a bigger 'field' but this will significantly increase interactive complexity, particularly for steeple chase rather than flat racing. The ideal outcome is for a 'Grand National' simulation. The Associate will undertake a further investigation into mechanisms to achieve multi (more than 6) racehorse interaction. The focus for the Associate will be AI and MAS techniques. A rule-based approach (from the field of AI) is proposed to encode behaviours, while agent communication mechanisms (advocated by MAS) are proposed for the interactions between racehorses. The associate will undertake the implementation of a multi-racehorse scenario (note that both the A-SJS and the CC-SJS involve only a single horse), including jumps, that incorporates the technical ideas identified in the foregoing project stages. The objective is to implement a scenario on the lines of The Grand National.

g) **Internet Support**. The company is keen to expand its capabilities to enable it to: introduce services, such as software leasing, to generate additional revenues; be able to offer software upgrades via the Internet; and (possibly) enable on-line software diagnosis and repair. A number of internet related support work packages are included in the programme of work whuch will be undertaken at various points during the course of the project's progress. In the first of these work packages the Associate will investigate and implement a mechanism for supporting 'annual software leasing'. The Associate will later complete an investigation into mechanisms to deliver software upgrades, diagnosis and software repair over the internet. Note that the expectation is that this work package will be preceded by one or more related undergraduate and/or postgraduate projects conducted by University of Liverpool (UoL) students and supervised by UoL staff including the Associate. The Associate will also investigate the support that can be provided through Racewood's homepage.

h) **Project End.** Associate will produce a post KTP development plan and establish mechanisms to provide internal and external resources to continue to deliver an IT capability and to support existing systems. Working closely with company staff, the Associate will devise and codify the company's processes, procedures and equipment for software development, drawing on the experience gained in the project and models of good practice. This will include such issues as version control, testing procedure and security etc.

3. **Department of Computer Science**

The University of Liverpool is one of the UK's leading research universities with a reputation nationally and internationally for high quality research. In the course of its history the University has been associated with no fewer than eight Nobel Laureates. In the most recent (2008) UK Research Assessment Exercise (RAE) 75% of research conducted within **The Department of Computer Science** was rated as 4* or 3*, and the proportion of world-leading research publications was the third highest in the UK.

The Department has a research-active Data Mining group and significant experience in the development of intelligent systems. As one of Merseyside's largest employers, The University of Liverpool is a major source for innovation and plays a key role in the economic development of the region in terms of employment, skills, research and technology.

4. **Racewood**

   Racewood designs and manufactures equine physical simulators. Prices range from a basic model at a little over £1,000 to an interactive model at over £40,000, with sales split ~50/50 between the UK and export markets. The simulators are sold world-wide in three equine areas; dressage training, racing and polo. They are sophisticated pieces of equipment recommended by the British Racing School in Newmarket, RACE in Eire, The Royal Hong Kong Jockey Club and many others and are used by professional riders and jockeys as a training tool. The company also gain supplementary revenues from servicing, parts and training.

5. **Knowledge Transfer Partnerships (KTP)**

   KTP is a government training scheme designed to facilitate partnerships between business and universities or research organisations, placing graduates (KTP Associates) for 1-3 years, to work on challenging, high profile projects. Details of the KTP scheme can be found at www.ktponline.org.uk. All KTP programmes provide excellent training packages, including training and assessment for the Chartered Management Institute's Level 5 Diploma in Management.

6. The holidays and hours of work will be by arrangement with your supervisor. Normally The Associate will be expected to observe the hours of employment and attendance in place at Racewood Ltd.

7. Although a University employee, the associate will spend 90% of his/her time working as part of a team in the company to implement the project. While the day to day work of the Associate will be supervised by the Supervisor in the company, regular meetings with the Academic Supervisor of the project will to discuss progress and problems will be held.

8. The post is a two-year Knowledge Transfer Partnership with potential to lead on to a permanent position within Racewood Ltd.

9. The Associate will have administrative duties such as preparing reports at regular intervals and making presentations on progress

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10. The Occupational Pension Scheme associated with this appointment is the Universities Superannuation Scheme (USS). Under the provisions of this scheme a member of staff currently contributes at a rate of 6.35% of his or her pensionable salary and the University such sum as may be required to maintain the full benefit of the scheme.

    Full particulars of the scheme can be obtained, on request, from the Director of Human Resources.

    An acceptance of this appointment will be taken as an application to join USS and have the appropriate contributions deducted from salary unless the Director of Human Resources is expressly notified in writing either before commencing employment, within three months of that date or on expiry of three months notice, that the appointee intends to make his or her own pension arrangements.

    Should the appointee decide to make his or her own personal pension arrangements, the University will not contribute to the personal arrangement. No other form of supplementation of pension benefits will be available from the University.

POSITIVE ABOUT DISABLED PEOPLE

It may be possible for a newly appointed member of staff who has not been in USS to have his or her accrued benefits from his or her former pension scheme transferred to the USS. In such a case, USS will be asked to investigate a transfer payment and will provide, on actuarial advice, a proposal for a number of years' credit in USS which such payment would secure. The member of staff is at liberty either to accept this or elect to deal with his or her accrued benefits as determined by the rules of his or her former scheme.

11. The appointment is subject to retirement at the age of sixty-five and upon the basis of the Statutes, Ordinances and Regulations of the University for the time being. The terms of appointment will be in accordance with the Education Reform Act, 1988.