Ice Creative Ltd

JOB TITLE: Product Development Engineer
Job Ref: REQ16599

School/Department summary

A KTP (Knowledge Transfer Partnership) is a collaboration between a university and a company, jointly funded by the Company and Innovate UK.

This KTP is between Loughborough University and ICE Creative Ltd. KTP 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.

The KTP Associate will be based at the Company premises in Winchester.

1. **Introduction to the Company**

   ICE Creative
   Ice Creative, are an integrated digital, web and brand design agency who deliver powerful solutions to clients, through intelligent design and strategic execution. Ice Creative help clients bring their brands to life by providing all the strategic, creative and digital tools they need to establish meaningful, positive and profitable relationships with their customers.

2. **Overview of the Department**

   Founded in 1974, the Department of Computer Science was one of the first university computing departments to be established in Great Britain. It is a part of the Loughborough University School of Science. It currently consists of 24 full time academic members of staff and over 40 full time researchers. The department's research expertise includes digital imaging and computer vision, robotics and autonomous systems, artificial intelligence, computer networks, control systems and theoretical computer science. The 2014 Research Excellence Framework classified 95% of the Department's research as of an international standard (rated 2*, 3* or 4*) under the Computer Science and Informatics category. The department has been placed amongst the top five UK departments in computer science in teaching quality during the past seven years.

3. **Project Outline**

The aim of the project is to create an Enhanced Rendering System for Augmented Reality (ERESAR) capable of creating photo-realistic rendered objects within a real world setting, to support sale, promotion, accurate visualisation, planning, and marketing purposes.

ICE Creative focus on digital design, creativity and strategy to help brands connect and engage positively with their customers. This KTP partnership is strategic because it will allow ICE Creative to substantially boost the visual realism, appeal and accuracy of a large variety of Augmented Reality (AR) visual scenarios, thereby transforming the current market for such applications, and opening their products to a large number of new customers and end-users. These include retailers and manufacturers that need to create visually realistic images of their products in

personalised scenarios. ICE Creative Ltd plan to acquire a competitive advantage for Augmented Reality (AR) applications with state-of-the-art lighting and photo-realistic rendering.

The successful candidate will be employed as a KTP Associate by Loughborough University but will be based at ICE Creative in Winchester. The work will also involve travel between the company and Loughborough University. The successful applicant will also need to travel to management training/courses and to interact with company clientele.

Winchester has recently been designated the best place in the UK to live by the Sunday Times (2016), which highlighted its rich history, culture, transport links and quality of life enjoyed by its citizens.

Job Description

Job Grade: Other

Job Purpose:

The KTP Associate will:

- Undertake a literature and market review to examine the current state of the art in the field of Augmented reality and to establish ICE Creative's place in the market
- Perform a feasibility study to identify a set of software and hardware solutions to be adopted for the ERESAR system
- Conduct hardware tests and reflectance properties acquisition via the Dark Room Light Rig Research device based at Loughborough University
- Program image-based lighting and rendering of specific materials/surfaces with reconstructed irradiance environment maps
- Develop the functionality to integrate virtual objects into an app interface, using markers, manual positioning and 3D mapping
- Develop, test and evaluate a fully functional prototype of the E-ES App. The E-ES App is an expert sales App for a window furnishings company that allows customers to visualise a product within their own home environment prior to purchasing.

Challenges:
- To be immersed fully in a commercial research and development environment, and support the company in meeting their technical development challenges
- To gain an understanding of quality assurance and the importance of end user requirements
- To develop an understanding of the costing and pricing infrastructure of a commercial product

Opportunities
- To work with and learn from an academic team with many years' experience in the field and contribute directly to commercial research and development
- To apply research and academic expertise in a real-time commercial context
- To enhance their professional development and develop skills in project management
- To become an expert in a very specialised field of engineering/design

Job Duties
1. Carry out the KTP project tasks and deliver the outcomes as outlined in the project plan

2. Manage the project and disseminate the findings to the project team

3. Undertake KTP management training, as well as other courses as deemed necessary

4. Write research and development reports, and present these at the Local Management Committee (LMC) meetings, as well as at national conferences and symposia with other members of the project team

5. Prepare research papers for publication in highly acclaimed learned journals, in line with the expected scholarly activities of the University Research Staff, but in accordance to the commercial sensitivity of collaborating companies

6. Travel to Company clientele and to various other locations within the UK, and possibly overseas, as required

7. To undertake such other duties as may be reasonably requested and that are commensurate with the nature of the post

Points To Note

The purpose of this job description is to indicate the general level of duties and responsibility of the post. The detailed duties may vary from time to time without changing the general character or level of responsibility entailed.

Special Conditions

All staff have a statutory responsibility to take reasonable care of themselves, others and the environment and to prevent harm by their acts or omissions. All staff are therefore required to adhere to the University's Health, Safety and Environmental Policy & Procedures.

All staff should hold a duty and commitment to observing the University's Equality & Diversity policy and procedures at all times. Duties must be carried out in accordance with relevant Equality & Diversity legislation and University policies/procedures.

Successful completion of probation will be dependent on attendance at the University's mandatory courses which include Respecting Diversity and, where appropriate, Recruitment and Selection.

Organisational Responsibility

Reports to the Loughborough University KTP Knowledge Based Supervisor

Person Specification

Your application will be reviewed with respect to meeting the essential and desirable criteria listed below.
Your application will be reviewed against the essential and desirable criteria listed below. Applicants are strongly advised to explicitly state and evidence how they meet each of the essential (and desirable) criteria in their application. Stages of assessment are as follows:

1 – Application
2 – Test/Assessment Centre/Presentation
3 – Interview

Essential Criteria

Area	Criteria	Stage
Experience	Experience of one or more of the following; - Image Processing - Computer vision and graphics - Lighting and rendering	1 & 3
	Experience of programming in C/C++	1 & 3
Skills and abilities	Good written communication skills, ability to produce professional standard reports	1 & 3
	Good personal and presentational skills	1 & 3
	Good research skills and ability to handle data	1 & 3
	Good time management skills	1 & 3
	Good computer skills including Word processing, spreadsheets, databases and presentation software	1 & 3
Training	Willingness to undertake KTP training modules	1 & 3
Qualifications	PhD in Computer Science	1
Other	To observe the University Equal Opportunities policies at all times.	3
	Flexibility in working conditions and hours	3

Desirable Criteria

Area	Criteria	Stage
Experience	Experience of team and project working in a multi-disciplinary environment	1 & 3
	Experience with Unity and mobile app development	1 & 3
Other	Licensed to drive in the UK (as travel to client sites may not always be accessible via public transport)	1, 3

Conditions of Service

The position is FULL TIME and FIXED TERM for 18 months.
The successful candidate will be employed by Loughborough University, but will be based at ICE Creative, Winchester

The appointment will be subject to the University's normal Terms and Conditions of Employment for Academic and Related staff/Operational and Administrative staff (insofar as they do not conflict with the working practices of the Company with which they will be expected to comply) details of which can be found here.

We also strive to create a culture that supports equality and celebrates diversity throughout the campus. The University holds a Bronze Athena SWAN award which recognises the importance of support for women at all stages of their academic career. For further information on Athena SWAN see
http://www.lboro.ac.uk/services/hr/athena-swan/

Informal Enquiries

Informal enquiries are welcomed and should be directed to Andrea Soltoggio Lecturer in Artificial Intelligence, Loughborough University, tel: +44 (0)1509 635748

Applications

Please note to be eligible to be considered for this post you must not have been a KTP Associate or employed by the company.