UNIVERSITY OF SURREY

KTP Associate Role Profile

Job Title:	R&D Software Developer (KTP Associate, Humain)

Business Partner / University School	HUMAIN / Department of Computer Science and the Centre for Vision, Speech, and Signal Processing (CVSSP)

Based at:	Humain Limited, 1 Hill St, Belfast, BT1 2LA Northern Ireland

Job Summary and Purpose:

To undertake a Knowledge Transfer Partnership project in accordance with a pre-defined programme of works. The Associate is employed by the university; based at the business partner; working alongside company staff; and supported by university academics.

Main Responsibilities/Activities

The Knowledge Transfer Partnership (KTP) programme is a graduate recruitment scheme. It supports a RECENT graduate or postgraduate (known as the Associate) transition from university to a career in industry. It is a chance to deliver impact and can be the perfect launchpad, helping enhance your career. A KTP Project is a collaborative, three-way partnership between the Associate, a university (Knowledge Base) and a company (Business Partner), the aim of which is knowledge exchange between academia and industry.

This KTP project is co-funded by Innovate UK and Humain Limited. The contract of employment is offered for a fixed-term, 30-month period. The Associate is employed by the University of Surrey but based at HUMAIN in Belfast, NI.

The postholder will be expected to apply their academic knowledge, expertise, and skills to a real-world challenge with the aim of making them a technical authority in their subject area. As a project manager, they'll 'own' their own project, linked to both a university and a business, whose experienced teams will provide full support. The Associate will be responsible for embedding new knowledge within both the business partner and the University of Surrey. Direct access to Academic's is maintained through weekly meetings, online and at the Business Partner.

The Associate is provided a dedicated training budget and time ringfenced for specifically for their further development; perhaps a higher degree, and career advancement.

HUMAIN create digital humans for world-leading AAA video game developers including multiple Xbox Game Studios, 343 Industries (Halo), Activision (Call of Duty), Obsidian (Outer Worlds), and Zenimax. They do this by creating face and body rigs that

result in realistic, emotional, and expressive characters. Combining psychology and anatomy, with animation, coding, and art. The company's diverse team include world-renowned Facial Action Coding System expert, Dr Erika Rosenberg, and visual effects veteran Professor Greg Maguire (Avatar, Harry Potter, Star Wars).

The Associate will be responsible for applying state-of-the-art machine learning techniques such as deep learning, to develop an innovative solution that reduces the cost, time, and effort it takes us to create these highly emotive interactive digital humans. This will require the application of sound academic knowledge and principles in a real-world environment and a scientific assessment of what is realistically achievable within a production environment. The Associate's success will enable HUMAIN to create more products, widen its user base, and increase its profitability to make it a market leader. The key challenges will be to develop innovative solutions, identify and resolve technical issues and provide technical solutions, drawing on managerial, scientific, and technical skills.

Person Specification

The post holder must:

- Be a recent postgraduate in Computer Science with AI/Machine Learning/Computer Vision/Computer Graphics background (a minimum of a 2.1 (merit) or above).
- Have the drive to take responsibility for leading and delivering this strategic and innovative project.

The Associate will have authority over some aspects of the project work, so must be capable of providing academic judgement, offering original and creative thoughts, and be able to interpret and analyse results.

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Relationships and Contacts

This is not an exhaustive list of every relationship the post holder has but is a brief description of those that play an important part in the post holder successfully carrying out the role.

As part of the KTP team at Surrey, the Associate will work closely with both the University Academics and the Business Partner Supervisor and liaise with the University of Surrey's KTP Office. There will also be the opportunity for the postholder to network with other KTP Associates. The Associate will be expected to meet regularly with professionals from the Business Partner and their client base, who may provide feedback on the scope and progress of the project.

Internal Relationships

- KTP Office
- Business Partner KTP team
- Academic KTP team
- University of Surrey Students/Staff
- Other Company Staff

External Relationships

- Innovate UK KTN - KT Adviser
- Other KTP Associates
- Business Partner's Clients

Special Requirements

Based at the Business Partner site, the KTP Associate:

- must be prepared to work outside normal working hours, when required.
- must be willing to undertake further studies, as approximately 10% of their working hours should be dedicated to training and development.
- will be required to travel to the University of Surrey, and occasionally more widely.

As a university employee, all KTP Associates are expected to:

- Undertake such other duties within the scope of the KTP as may be requested by their supervisors or Line Manager.
- Positively support equality of opportunity and equity of treatment to colleagues and students in accordance with the University of Surrey Equal Opportunities policy.
- Follow the Business Partner's policies and working practices at all times to ensure that no disclosure of confidential information results from their actions.
- Follow University/School/Department policies and working practices at all times to ensure that no disclosure of confidential information results from their actions.
- Ensure they are aware of and abide by all relevant University / Business Partner / KTP regulations and policies relevant to their role.
- Help maintain a safe working environment by:
  - Attending training in Health and Safety requirements as necessary, both on appointment and as changes in duties and techniques demand
  - Following local codes of safe working practices and the University of Surrey Health and Safety Policy
- To be a team-player, supportive of colleagues and operating in a collegiate manner at all times.

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Background Information

As the KTP Associate is based at the Business Partner site, the working hours, annual leave, and holiday entitlement are those of the Business Partner.

The standard working hours of Humain Ltd are 35.5 hours per week. Core hours are 9:30-4:00 Mon-Friday, when employees must be present. Morning meetings commence at 9:30am and close of business is 6pm (4pm on Friday) . Staff are entitled to a 1 hour lunch break. Annual leave entitlement is 25 working days per year plus 8 Northern Irish public holidays. The holiday year runs from the 1 Jan to 31 Dec each year. There is a mandatory shut down over the Christmas period, which involves 4 days of holiday entitlement.

Please also see humain-studios.com and www.ktp-uk.org

Person Specification

This section describes the sum total of knowledge, experience & competence required by the post holder that is necessary for standard acceptable performance in carrying out this role. This is in addition to the criteria contained within the accompanying generic Role Profile.

The Associate should have:	Essential/ Desirable
1. an MSc (or PhD) in Computer Science with AI/Machine Learning/Computer Vision/Computer Graphics background (a minimum of a 2.1 (merit) or above).	E
2. English Language at minimum IELTS 7.0 (or a degree qualification studied in an English-speaking country, e.g. USA or UK) or native English speaker.	E
3. Experience in building and training deep neural networks and 3D geometry processing.	E
4. Experience in Python programming.	E
5. An interest and experience of working in an environment that is responsive to short-lead time demands of customers.	E
6. Knowledge in 3D morphable models, face tracking methods.	D
7. Experience in facial blendshapes and facial rigging tool development.	D
8. Experience in the Facial Action Coding System.	D
9. Experience in TensorFlow/PyTorch, OpenCV and OpenGL.	D
10. Experience in computer graphics programming skills including C++, Maya Mel and plugin programming.	D
11. Experience in academic writing, publication, and presentation.	D

	Essential/ Desirable
12. Previous industrial experience (e.g. placement (advantageous)).	D

Special Requirements	Essential/ Desirable
Good understanding of the Business Partner, where you will be working, AND of the KTP programme.	E
Good soft skills such as the ability to communicate and deliver presentations well, good time management , prioritisation, and teamwork.	E
Ability to drive and project manage a strategic KTP.	E
Ability and passion to absorb knowledge and further develop skills during the KTP.	D
Excellent oral and written communication skills.	D

Key Responsibilities

This document is not designed to be a list of all tasks undertaken but an outline record of any faculty/post specific responsibilities (5 to 8 maximum). This should be read in conjunction with those contained within the accompanying generic Role Profile.

1. Lead and deliver an innovative project, bringing the University academics and the Business Partner together.
2. Assist the Business and the University to develop synergetic relationship in validating the use of this new technology into practice in industry.
3. Identify critical factors that promote the development of such a relationship.
4. Apply scientific knowledge to translate technological readouts into impactful production outcomes.
5. Produce high-quality outcomes with game-changing, real-world impact.
6. Help grow and promote the Business Partner's technical capabilities.
7. Embed new knowledge in both the Business and the University.

N.B. The above list is not exhaustive.