KTP Associate Role Profile

Job Title:	AI Fleet Analytics & Engineering Associate (KTP Associate, Whitespace Work Software)

Business Partner / University School	**Whitespace Work Software Ltd** and the **University of Surrey's** School of Engineering, and the Surrey Business School.

Based at:	Whitespace Work Software Limited, Riverside Court, Douglas Drive, Godalming, Surrey, GU7 1JX

Job Summary and Purpose:

The University of Surrey in partnership with **Whitespace Work Software Ltd,** seeks a highly motivated recent postgraduate to co-lead an exciting and transformative Knowledge Transfer Partnership (KTP) project. This is a rare opportunity to drive innovation at the intersection of academia and industry, working on a pre-defined programme of works with real-world impact.

About KTP:

The KTP programme is not your typical (post)graduate scheme - it's a launchpad for ambitious individuals ready to fast-track their careers in a dynamic business environment. As a KTP Associate, you'll transition seamlessly from academic study into industry, applying your expertise to solve meaningful challenges and deliver innovation from day one.

A KTP Project is a powerful three-way collaboration between:

- You, the Associate – leading innovation and driving change
- The Business Partner (company) - where you'll be based, applying your skills in a commercial setting
- The Knowledge Base (university), providing academic insight, expertise, and support

The benefits:

- Hands-on experience in a forward-thinking company
- A dedicated professional development budget
- Tailored Business and Leadership training
- Mentorship from both academic and industry experts
- The opportunity to build high-impacts skills in project management, strategic thinking, and innovation delivery.

This **24-month** fixed-term role is co-funded by Innovate UK and the Business Partner, and offers the potential to progress into a permanent position with the business partner upon successful completion of the KTP.

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The Associate is employed by the University of Surrey but embedded with the business, working under the guidance of experienced company professionals and supported by leading university academics.

About Whitespace:
As the UK's market leader in environmental and waste software, **Whitespace** currently supports over 130 local authorities and public sector contractors with scalable future-ready technology. Since 2005, they have built a reputation for delivering reliable, future-ready technology that transforms waste management, environmental services, and contract operations. Our continued investment in products and people reflects our commitment to quality, innovation, and long-term partnerships.

If you are passionate about applying your academic knowledge to real-world challenges, and eager to make a lasting impact in a fast-paced, collaborative environment—this KTP opportunity is your gateway to a rewarding and future-focused career.

Main Responsibilities/Activities

This project aims to develop an AI powered, EV-Optimised route optimisation tool that assists Local Authorities in managing waste collection more efficiently and supports a transition to electric vehicles. This in-house solution will allow the business to maintain control over its costs, its development, and ensure its software meets the evolving client needs. In doing so, the Whitespace will be able to:

i) Swiftly process and analyse large volumes of data, enabling it to rapidly make informed decisions, and
ii) Design and implement robust database structures, data pipelines, and secure APIs to enable real-time data acquisition, transformation, and integration across fleet systems and third-party services, ensuring scalability, reliability, and data security, and
iii) Establish a robust framework for continuous software development and maintenance, ensuring its effectiveness and adaptability to evolving needs.

The project is grounded in specialised engineering and technology, requiring input from the School of Engineering. It follows the CRISP-DM (Cross-industry standard process for data mining) framework, encompassing critical phases like data extraction, preparation, intensive analysis, and evaluation. Sophisticated machine learning models will be leveraged to unlock predictive insights, including vehicle energy use, emissions, range estimation, and battery health, that optimise routing under varying geographic, traffic, and weather conditions.

As the project manager, the Associate will have ownership of the project while collaborating with the second Associate, the university, and the business partner - whose experienced teams will provide comprehensive support.

The Associates will play a key role in enabling effective knowledge exchange and integration between the business partner and the University of Surrey academics. To ensure the success of interdependent projects, the Associates must cultivate a dynamic, cohesive, and strategically aligned working relationship. Working collaboratively, the **two Associates** will drive KTP impact through cross-business engagement; align methodologies, terminology, and assumptions; define shared

performance goals and metrics; coordinate real-time integration of static and dynamic components during testing; and visually articulate complex solutions to a range of stakeholders.

Person Specification

The post holder profile:

- Holds a **postgraduate degree** in **Engineering** (Automotive and/or Energy), **Data Science**, or a related **computational or quantitative discipline**.
- Demonstrated ability to **model complex vehicle systems** including vehicle dynamics, energy consumption, battery health and degradation, tailpipe emissions and environmental impact.
- Proven experience in building and maintaining data pipelines, designing scalable database architectures, and developing secure APIs for data integration, including the extraction and processing of vehicle telemetry, traffic (e.g., TomTom), and geospatial data (GIS, GPS, OpenStreetMap).
- Proficient in business intelligence and data visualisation tools (e.g. Power BI), SQL, and cloud-based database systems.
- Skilled in programming languages relevant to data and modelling such as Python, Matlab, R, C#.
- High competency written and spoken English at a technical level (e.g. IELTS 7.0 or a degree from a majority English-speaking country)
- Excellent communication skills to engage effectively with diverse stakeholders (technical, business, policy, scientific).
- Ability to translate technical jargon for non-technical audiences.
- Enthusiasm for applying scientific methods to solve real-world industry challenges.
- Project management and Business Acumen: Ability to lead a strategic project, mapping business and information processes, presenting insights through clear reports
- Collaborative team player with commitment to continuous professional development, especially soft skills and stakeholder engagement.

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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 an integral member of the University of Surrey's KTP team, the Associate will work in close collaboration with both university academic and the business partner Supervisors. This includes forming a project team, while maintaining regular communication with the University's KTP Office.

Weekly meetings - both online and on-site at the Business Partner's premises - will facilitate ongoing engagement with the academic team and ensure project remains on track. The Associate will be one of two KTP Associates based at Whitespace - both Associates must establish a proactive, integrated and optimal working relationship.

The role offers valuable networking opportunities with other KTP Associates across the UK, fostering peer learning and professional development. Additionally, the Associate will engage directly with professionals from the business partner and their clients, gaining valuable feedback that will help shape the project's direction and impact.

Internal Relationships

- University KTP Office
- Business Partner KTP delivery team
- Academic KTP delivery team
- 2nd KTP Associate
- Other University of Surrey Staff and Students
- Other Company Staff

External Relationships

- Innovate UK Business Connect - KT Adviser.
- Other KTP Associates.
- BETA focus group
- 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
- Be a team-player, supportive of colleagues and always operating in a collegiate manner.

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Addendum

This document provides additional information relating to both specific aspects of the post/faculty and any post specific person specification criteria. The information contained within this document should always be read in conjunction with the accompanying generic Role Profile.

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Background Information

The **working hours, annual leave,** and **holiday entitlement** are those of the Business Partner.

The **standard working hours** of Whitespace work Software Ltd are 37.5 hours per week including 60 minutes taken as a lunch break.

- The standard hours are 09:00-17:30.
- Flexibility, with core office hours 10:00-16:00.
- Working pattern – expected to be office-based Monday to Thursday.

Annual Leave

The annual leave entitlement is 25 days per annum, plus UK public holidays.

- Office Closure – the office is closed between 24th December and 31st December. Circa 3 days holiday automatically taken from staff during this time.
- All annual leave should be approved and taken within the period of the KTP.
- The holiday year runs from 1st January to 31st December.

Potential to secure a permanent job with the business at the end of the KTP.

Please also see https://whitespacews.com/ and https://iuk-ktp.org.uk/

Benefits to expect from the University of Surrey include a generous pension, discounted membership to Surrey Sports Park, cycle-to-work scheme, season ticket loans. Access to a wide range of courses under the Learning & Development Programme; library access

Benefits to expect from the KTP Programme include opportunity to gain professional qualifications or a higher degree. Access to academic support and the University's facilities to help deliver the KTP project.

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.

	Essential/Desirable
Holds a postgraduate degree in Engineering (Automotive and/or Energy), Data Science, or a related computational or quantitative discipline.	E
Demonstrated ability to model complex vehicle systems including vehicle dynamics, energy consumption, battery health and degradation, tailpipe emissions and environmental impact	E
Proven experience in building and maintaining data pipelines, designing scalable database architectures, and developing secure APIs for data integration, including the extraction	E

and processing of vehicle telemetry, traffic (e.g., TomTom), and geospatial data (GIS, GPS, OpenStreetMap)	
Proficient in business intelligence and data visualisation tools (e.g. Power BI), SQL, and cloud-based database systems	E
Skilled in programming languages relevant to data and modelling such as Python, Matlab, R, C#	E
A high level of competence in spoken/written English at a technical level (i.e. IELTS 7.0 or a degree studied from a majority native English-speaking country)	E
Excellent communication skills to engage effectively with diverse stakeholders (technical, business, policy, scientific).	E
Enthusiasm for applying scientific methods to solve real-world industry challenges.	E
Capable of translating complex technical concepts into layman language.	E
Methodical in experimentation with accurate and professional reporting.	E
Proven ability to co-lead and manage a strategic KTP, integrating technical and strategic elements.	E
Collaborative team player with commitment to continuous professional development.	E
An interest in smart mobility and electric vehicle (EV) technologies would alignment with the business and project focus.	D
Special Requirements	**Essential/Desirable**
A clear understanding of the Business Partner where you'll be based; the KTP programme - how it bridges business and the University, and the vital role the KTP Associate.	E
Ability to absorb knowledge and further develop skills during the KTP to complement those skills already in place, especially soft skills and stakeholder engagement.	E

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. Co-Lead the delivery of an innovative AI project in collaboration with a second Associate, bringing the academic expertise and commercial application.
2. Processing and analyse large-scale geospatial datasets, requiring advanced SQL skills and proficiency with PostGIS.
3. Applying clustering techniques to manage and interpret complex data sets effectively.
4. Collaborate closely with the second Associate on data modelling, visualisation and the development of a robust aggregation engine.
5. Integrate real-time vehicle telemetry and traffic APIs (e.g. TomTom) into a unified, scalable data pipeline.
6. Model electric vehicle (EV) energy consumption with precision, incorporating battery degradation, charging behaviour, and energy constraints.
7. Exploring and evaluate machine learning approaches for deployment in real-world operational environment.
8. Contribute to database development, including system security, maintenance planning, and governance strategies.
9. Translate complex data into actionable insights, using visualisation tools to present findings aligned with customer needs and priorities.
10. Embed new knowledge and capabilities within both the Business Partner and the University, ensuring long-term impact and knowledge transfer.

N.B. The above list is not exhaustive.

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