

## Job Description

**Job Title: Software Developer (KTP Associate)**

**Faculty/Directorate: Technology, Arts and Culture**

**Grade: E (£32,080 – £33,951)**

**Role profile: SSE4**

**Full time (37 hours per week)**

**Fixed term (24 months)**

	Duties of the role
<b>Role Outline</b>	<p>De Montfort University is seeking a motivated and talented Computer Science / Software Engineering graduate with expertise in Secure Coding and Artificial Intelligence (AI) to be part of an exciting dual associate Knowledge Transfer Partnership (KTP) project in collaboration with Utility Trade Limited. This 24-months KTP project aims to develop a bespoke AI-based software solution to offer precise pricing forecasting, modelling and optimisation capabilities for Utility Trade Limited.</p>
<b>About Us</b>	<p>This project is funded by Innovate UK via the KTP programme, which enables the business to bring in new skills and the latest academic thinking to deliver a specific, strategic innovation project.</p> <p>De Montfort University is a university of quality and distinctiveness, distinguished by our life-changing research, dynamic international partnerships, vibrant links with business and our commitment to excellence in learning, teaching and the student experience.</p> <p>Utility Trade Limited is an award-winning independent energy and utility consultancy, working directly with 15 energy suppliers (including British Gas, Scottish Power), supporting over 5,000 UK businesses to manage their energy and utility contracts.</p> <p>Utility Trade Limited aims to grow commercially by providing swifter response times to clients, delivering enhanced reporting and billing services, and improving their forecasting and data modelling capabilities through bespoke AI-based software solutions.</p>
<b>Overall purpose of the role</b>	<p>Based at Utility Trade Limited office, in Market Harborough, with occasional visits to De Montfort University, the Software Developer (KTP Associate) will support Utility Trade Limited embedding secure software development methodologies and secure data management to their organisational processes and future projects.</p> <p>The post holder will:</p> <ul style="list-style-type: none"> <li>• Work closely with Utility Trade Limited team, and alongside a Data Analytics focused KTP Associate, to build a bespoke Customer Relationship Management (CRM) and automated AI-based functions following secure software development best practices.</li> <li>• Take the responsibility of ensuring the usability, robustness and security of the developed CRM, through quality assurance tests and feedback gathering from relevant stakeholders, as well as completing seamless integration of the CRM within existing IT.</li> <li>• Remain aware, through literature review, training and other research activities, of current technological advancements in relation to the requirements of the project, allowing knowledge transfer to upskill the relevant staff within Utility Trade Limited.</li> <li>• Produce high standard periodic project progress reports, deliver presentations to the supervisory team, local management committee and relevant stakeholders, and disseminate findings and project outputs in peer reviewed 3*/4* academic publications.</li> </ul>

	<p>The KTP associate leads the strategic business project with support from the university and business teams. Applying academic knowledge to a real-world challenge, a KTP is a chance to deliver impact and shape your career. There is also a training and development budget which allows you to further enhance your personal and professional development.</p>
<b>Main duties and responsibilities</b>	<p>The main responsibilities of the post holder are:</p> <ul style="list-style-type: none"> <li>• Audit existing systems and IT infrastructure at Utility Trade Limited.</li> <li>• Define and maintain Key Performance Indicators (KPIs) and project requirements.</li> <li>• Define and maintain data management plan, project plan, and risk register.</li> <li>• Design CRM system architecture using modelling techniques.</li> <li>• Develop CRM using relevant programming languages (e.g., JavaScript, Python).</li> <li>• Develop and integration of AI-based functions, including automatic information extraction from unstructured documents layouts.</li> <li>• Apply secure coding practices into agile software development methodologies.</li> <li>• Integrate data pipeline, ETL scripts, analytics and predictive models, dashboard, secure APIs and data stores into CRM.</li> <li>• Implement quality assurance tests, unit tests, component tests, integration tests, data flow tests, systematic software verification and validation.</li> <li>• Plan and lead feedback gathering activities from relevant stakeholders.</li> <li>• Maintain project timeline, and present progress to local management committee.</li> <li>• Remain aware of relevant technological advancements through research activities.</li> <li>• Upskill relevant staff and embed technical knowledge within Utility Trade Limited.</li> <li>• Contribute to meetings and scholarly dissemination linked to the KTP.</li> <li>• Disseminate project outputs in peer reviewed high impact factor academic publications.</li> <li>• Create technical manuals, periodic project progress reports, and final project report.</li> </ul> <p>This job description reflects the main duties and receptibilities of the post. However, the post holder may be required to perform any other duties commensurate with the job grade as reasonably required from time to time.</p> <p><b>Act in accordance with DMU Values:</b></p> <ul style="list-style-type: none"> <li>• Collaborative – Work together to achieve joint outcomes, understand how your work contributes to DMU, and be aware of your personal impact on others.</li> <li>• Compassionate – Be open, honest, and caring, work on a basis of trust, and hold yourself accountable for your actions.</li> <li>• Creative - Strive for better, challenge bureaucracy, explore digital solutions, and innovate creatively.</li> <li>• Community minded - Embrace alternative views, treat others with respect, and tackle inequalities.</li> </ul> <p>Treat all DMU staff, students, contractors and visitors with dignity and respect. Provide a service that complies with the Equality Act 2010, eliminating unlawful discrimination, advancing equality of opportunity and fostering good relations with particular attention to the protected characteristics of age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief (or none), sex and sexual orientation.</p> <p>All members of staff are responsible for their contribution to improved environmental</p>

	<p>performance and in reducing greenhouse gas emissions at DMU. It is therefore required that all members of staff are aware of how the Environmental Policy relates to their own role at the University. Staff conduct must reflect the values inherent in the Environmental Policy and where required staff must cooperate with environmental compliance and conformance requirements to help minimise our emissions to air, water and land.</p>
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	<p>The postholder should have a positive attitude towards health and safety, and be aware of and comply with all health and safety policies for the university, as applicable. There will be a requirement to complete all mandatory health and safety training as deemed to be relevant for the position held. The postholder is expected to help maintain a safe working environment for staff, students and visitors by working closely with the local safety coordinator as required. Any accidents or dangerous incidents must be reported promptly through the university's reporting system.</p>
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# Person Specification

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Area of responsibility	Requirements	Essential or desirable		*Method of assessment			
				A	I	T	D
<b>Qualifications &amp; Training</b>	Bachelor's degree (2:1 or higher) in Computer Science, Software Engineering or related disciplines	Essential		✓			✓
	Higher degree (MSc/PhD) in a relevant field or equivalent industrial experience		Desirable	✓			✓
	Relevant formal certification, e.g., Microsoft AZ-204 and AWS DVA-C02		Desirable	✓			✓
<b>Previous Work Experience</b>	A minimum of one year of industrial experience with software development in one or more programming languages		Desirable	✓	✓		
	Demonstrable experience undertaking research projects		Desirable	✓	✓		
	Experience managing and leading a software development project		Desirable	✓	✓		
	Experience developing a Customer Relationship Management (CRM) or similar system		Desirable	✓	✓		
<b>Knowledge and Experience</b>	Proficient knowledge of one or more programming languages, e.g., Java, C++, Python	Essential		✓	✓	✓	
	Demonstrable experience developing web technologies, e.g., HTML, CSS, JavaScript, PHP	Essential		✓	✓	✓	
	Strong knowledge of web technologies e.g., REST APIs, SOAP, JSON, XML	Essential		✓	✓		
	Strong knowledge of agile software development lifecycle model	Essential		✓	✓		
	Strong knowledge of continuous integration and continuous delivery/deployment (CI/CD) pipelines	Essential		✓	✓		

Area of responsibility	Requirements	Essential or desirable		*Method of assessment			
				A	I	T	D
	Strong knowledge of security software development practices	Essential		✓	✓		
	Wide experience with code review and debugging, QA and test automation tools and frameworks	Essential		✓	✓		
	Strong knowledge of application security testing e.g. IAST, SAST, DAST	Essential		✓	✓		
	Experience building, maintaining and optimising relational and non-relational databases	Essential		✓	✓		
	Wide experience handling and managing large structured and unstructured data sets		Desirable	✓	✓		
	Wide experience of data visualisation and dashboard development, e.g., Power BI, Plotly, React.js		Desirable	✓	✓		
	Strong knowledge of Machine Learning / Artificial Intelligence (AI) algorithms		Desirable	✓	✓		
	Strong knowledge of data protection principles and experience handling confidential data		Desirable		✓		
	Wide experience handling confidential data		Desirable	✓	✓		
<b>Skills and Abilities</b>	Strong analytical and problem-solving skills	Essential		✓	✓		
	Strong organisational, interpersonal and time-management skills	Essential			✓		
	Strong communication, presentation and report writing skills for both technical and non-technical audiences	Essential		✓	✓		
	Ability to work effectively both independently and as part of a team	Essential			✓		
	Ability to learn new skills, and to develop original techniques, algorithms and methods	Essential			✓		
	Committed to personal development, and to adapt to new technologies and methodologies	Essential		✓	✓		
	Ability to interpret business requirements and to manage strategic alternative solutions		Desirable		✓		

Our Values and Behaviours at DMU							
<b>We are Collaborative</b> – we work together to get things done	We support each other to achieve joint outcomes	Essential			✓		
	We understand how our work contributes to DMU						
	We are aware of our personal impact on others						
<b>We are honest and Compassionate</b>	We are open, honest and caring	Essential			✓		
	We work on a trust basis						
	We hold ourselves accountable for our actions						
<b>We are innovative and Creative</b>	We constantly strive for better	Essential			✓		
	We challenge bureaucracy and explore digital solutions						
	We are innovative and creative						
<b>We are a community</b> – we value and champion difference	We embrace alternative views	Essential			✓		
	We treat others with respect						
	We tackle inequalities						

**\*A = Application Form; I = Interview; T = Test; D = Documentary Evidence**