Knowledge Transfer Partnership Associate – School of Engineering and Computing – Grade KTP Associate

Job Description

Purpose

The project will pioneer methods to detect and track moving objects in three-dimensional space. This will be achieved through a data-driven approach applying machine-learning algorithms to reliably detect, track, and classify objects across diverse conditions and environments.

Algorithms developed during the project will integrate multimodal sensors to deliver high-quality geolocation and classification information. Sensor-fusion techniques will be utilised to enable threat analysis and alerting with minimal operator intervention and the innovative solution is expected to exceed current capabilities. The work will be delivered through a three-year Knowledge Transfer Partnership (KTP) between the University of Lancashire and Operational Solutions Ltd (OSL).

Duties

1. Analyse and implement the latest practical approaches for object detection, tracking, decision-making, and multimodal data fusion.
2. Collaborate with academic and industry supervisors to develop, refine, and implement a detailed project plan and timeline.
3. Utilise machine-learning techniques to design, train, and validate deep-learning models addressing the project's challenges.
4. Develop and curate datasets required for training and validating deep-learning models.
5. Prototype and evaluate the developed implementations against defined performance metrics, assessing their feasibility for real-time applications.
6. Monitor and support the delivery of product features into a customer facing environment.
7. Montor and document the on-going impact of new product features in sales and estimate the impact of new sales on gross value added (GVA).
8. Understand and document improvements in business competitiveness and the impact of new developments within the company. (For example, up-skilling of other staff, the creation of new positions, strategic changes, and new business opportunities.)

9. Where appropriate, drive significant change and help the business to identify new opportunities.
10. Document and report findings from development and evaluation phases to academic and business partners, including recommendations for further development.
11. Support compliance with governance guidelines and regulations in conducting methods development and evaluations.
12. Participate in regular progress meetings with business and academic supervisors and contribute reports and presentations to the Local Management Committee (LMC) and project stakeholders.
13. Contribute to the development of technical reports, presentations, and publications related to the project's outcomes.
14. Support the dissemination of project results through conferences, workshops, and industry events.
15. Collaborate with business partners to integrate feedback and optimize the custom design for practical application.

Person Specification

Knowledge, Skills, and Behaviours (Essential)

- Understanding of Artificial Intelligence (AI), Machine Learning (ML) and data analytics principles (Application/Interview).
- Strong background in software development, including Python with PyTorch and/or TensorFlow (Application/Interview).
- Experience in working with various operating systems, particularly Windows and Linux (Application/Interview).
- Proven ability to manage project timelines, and collaborate effectively with academic researchers, industry partners, and stakeholders (Application/Interview).
- Strong business awareness (Application/Interview).
- An undergraduate degree in Computer Science, Engineering, Mathematics or a related discipline (Application).
- Understanding of methodologies and approaches for data curation (Application/Interview).
- Ability to manage and develop reporting processes, create reports and presentations for different audiences (Application/Interview).
- Excellent interpersonal and communication skills (Application/Interview).

- Adaptable and flexible approach to meeting targets and changing milestones (Application/Interview).
- Ability to critically analyse experimental results and the ability to problem solve (Application/Interview).

Knowledge, Skills, and Behaviours (Desirable)

- Direct experience or a strong background in computer vision and/or image processing (Application/Interview).
- Previous experience working with surveillance solutions, specifically those focused on counter-unmanned aerial systems (C-UAS) (Application/Interview).
- Proficiency with software-development tooling (e.g., Git, CI/CD, issue trackers), shell scripting and MATLAB or R (Application/Interview).
- Practical experience with image sensors, including visible-light, thermal, and depth cameras, as well as familiarity with fundamentals of control methods (Application/Interview).
- Ability to manage projects effectively and collaborate with academic and business teams (Application/Interview).
- Experience in experimental design, data analysis, technical writing, and presenting findings to stakeholders (Application/Interview).
- Postgraduate degree in AI/ML, a PhD would be welcomed (Application/Interview).
- Good understanding of licensing principles (Application/Interview).