Job Title: Applied Data Scientist in AI & Geospatial Intelligence (KTP Associate)
Job Description & Specification

JOB DETAILS

Department:	Agriculture and Environment	**Salary Band:**	£39,000 to £43,300 subject to experience
Hours of Work	Full Time (37.5-hours)	**Contract Type:**	Fixed Term –30 months
Responsible To:	Dr Joseph Mhango, Senior Lecturer in Applied Data Science, Harper Adams University Frank Cannon, Senior Consultant, Optimal Risk Group Limited		
Work Location:	Hybrid working between home and Optimal Risk Group Ltd office base in Reading, RG1 7QF		
Holiday Allowance:	23 days plus Bank Holidays		
Eligibility:	Valid **Right to Work** status in the UK required to undertake a Baseline Personnel Security Standard pre-employment screening.		

JOB PURPOSE

The purpose of this role is to lead the technical research, development and delivery of a national Rural Crime Information Platform and mobile app designed to improve awareness, safety and informed decision-making across rural communities. The platform will integrate live data feeds, social media intelligence, large language models (LLMs), geospatial analytics and behavioural science to map crime patterns, deliver real time alerts and provide interactive learning tools for communities, farmers, insurers, responders and wider sector stakeholders.

As a KTP Associate, the postholder will design and implement secure, end to end data and AI pipelines; develop advanced natural language processing and geospatial modelling components and translate these into a user centred, operational platform and app. The role sits at the intersection of applied AI, data engineering, geospatial science, and social behavioural research, requiring hands on technical innovation alongside user engagement and evidence based product development. Working with a high level of autonomy, the postholder will receive structured academic supervision and commercial mentoring to cocreate a high impact, nationally scalable solution that addresses real-world rural crime challenges.

About Optimal Risk Group
Optimal Risk Group is a UK based security and risk consultancy delivering integrated protective services across physical, digital, and operational domains. Since 2002, the company has established a market leading reputation in converged security risk management, combining human expertise with advanced technology to reduce

vulnerabilities and enhance organisational resilience

MAIN ACTIVITIES & RESPONSIBILITIES

Technical Development
- Design and implement secure, cloud-based data architectures, ETL pipelines, and relational databases to ingest and manage largescale unstructured social media crime data.
- Develop, evaluate, and optimise LLM based NLP pipelines to extract structured information from informal, noisy, and ambiguous text sources.
- Build language normalisation, entity extraction, certainty assessment and event classification modules to support trusted intelligence generation.
- Develop geolocation inference pipelines and implement geospatial modelling frameworks to generate spatial crime risk surfaces, hotspot indicators and uncertainty estimates.
- Integrate behaviour change, criminological, and socioecological theory into system design, including developing a Theory of Change and behaviour aware alerting strategies.

User-Centred Design, Pilots and Field Engagement
- Lead participatory design, co-development activities, and field-based pilot studies with farmers, insurers, rural communities, and sector stakeholders to ensure the platform reflects end user needs, operational realities and workflow integration.
- Facilitate workshops, prototype testing sessions, and structured user feedback cycles to inform iterative system refinement.
- Coordinate validation, usability testing and impact assessment during pilot deployments.

Platform and Interface Development
- Lead the design and development of the platform's user interface, including interactive maps, dashboards and analytical tools, in collaboration with end users and commercial partners.
- Ensure frontend components effectively communicate complex AI driven outputs in a clear, actionable format tailored to rural community requirements.

Systems Integration and Quality Assurance
- Coordinate testing the synchrony between frontend interfaces and backend services, security auditing, performance testing and overall system quality assurance.
- Ensure compliance with data protection, ethical AI and secure-by-design principles.

Documentation, Reporting, and Knowledge Transfer
- Maintain high quality documentation including code repositories, technical specifications, system architecture diagrams and training materials for knowledge transfer.
- Contribute to academic publications, conference outputs, commercial reports and stakeholder dissemination activities.

Commercial and Strategic Development
- Work with company and university partners to evaluate product market fit, user value propositions and commercialisation pathways.
- Support go to market planning, including market intelligence gathering, customer journey mapping and readiness assessments.

PERSON SPECIFICATION

	Essential	Desirable
Qualifications	A postgraduate degree in Data Science, Computer Science, Artificial Intelligence, Geospatial/GIS, Statistics, or a closely related quantitative discipline, with substantial research or thesis-based training	A quantitative PhD with components focused on application of AI in natural language processing, computer vision and regression problems Ability to work across disciplines and communicate effectively with both technical and non-technical stakeholders. Strong analytical skills and the ability to manage open-ended technical problems with a high degree of independence.
Experience	Strong Python programming experience for data processing, modelling, and/or software development. Experience designing or working with APIs, databases (e.g. PostgreSQL), and data pipelines. Practical understanding of machine learning and/or NLP, with evidence of applying these methods to real data.	Experience with large language models, prompt and context engineering, or advanced NLP pipelines. Experience with cloud platforms (e.g. AWS), containerisation (Docker), and CI/CD workflows. Familiarity with geospatial data, GIS tools, or spatial statistics.

| Knowledge/Skills | Understanding of end-to-end data and AI system design, from data ingestion through modelling, evaluation, and deployment.

Ability to reason critically about uncertainty, bias, and data quality in noisy, unstructured, or socially generated datasets.

Knowledge of machine learning model evaluation and validation, including limitations and failure modes.

Ability to translate qualitative or theoretical concepts (e.g. behavioural or risk frameworks) into computational or analytical representations.

Strong technical communication skills, including the ability to document, explain, and justify modelling and design decisions to mixed audiences. | Experience with frontend frameworks (e.g. React, Vue) and interactive data visualisation.

Experience with cyber-security and compliance with the Information Commissioners Data Principles

Exposure to behavioural science, criminology, social research methods, or participatory research.

Experience contributing to peer-reviewed publications or substantial technical reports. |
| Personal Qualities | Highly motivated, intellectually curious, and keen to develop advanced technical and professional skills.

Comfortable operating at the boundary of research and commercial application.

Organised, reflective, and able to document and justify technical decisions.

Able to engage sensitively with community stakeholders and end users. | |

Application Procedure:
All applications should be completed and submitted using the Harper Adams e-Recruitment programme at http://jobs.harper-adams.ac.uk **To be completed no later than midnight on 19 April 2026**

If you would like an informal conversation about this role, you can contact Dr Joseph Mhango on jmhango@harper-adams.ac.uk.

Should you require any adjustments to complete your application for this role then please contact vacancies@harper-adams.ac.uk

Pre-employment screening: Due to Baseline Personnel Security Standard BPSS requirements, we can only consider applicants who hold existing Right to Work status in the UK. Proof of RTW will be required prior to any offer being confirmed.