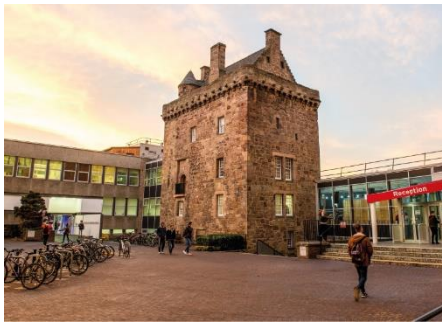
Research Fellow in AI-Enabled Aviation Operations





Role Description

GRADE

Grade 5

LOCATION

Merchiston, Edinburgh

LINE MANAGER

Stathis Tingas

Role Summary

Edinburgh Napier University is seeking a highly motivated and skilled Research Fellow to join our cutting-edge project in collaboration with QOCO, a leading Finnish company in aviation and software development. This fixed-term position (12 months) offers a unique opportunity to contribute to the development of AI-driven solutions aimed at revolutionizing Maintenance, Repair, and Overhaul (MRO) operations within the aviation industry. The successful candidate will work closely with our AI research team and project partners to investigate, design, and validate AI algorithms that enhance operational efficiency and workforce management in MRO processes.

The Research Fellow will play a key role in advancing AI models to address critical challenges such as demand forecasting, resource optimization, and real-time scheduling adjustments. This position requires expertise in AI methodologies, experience in algorithm development, and a strong understanding of data privacy regulations, particularly GDPR. The role will involve collaboration with academic and industrial partners to validate proof-of-concept AI solutions and contribute to the project's broader objectives of enhancing European leadership in AI-driven aviation technologies.

Line Management Responsibility for:

This role does not have any line management responsibilities.

Main Duties and Responsibilities

- Investigate and develop adaptive real-time AI models for MRO use cases, focusing on areas such as demand forecasting, resource optimization, automated scheduling, skills matching, and real-time change management.
- Test and validate the performance of AI algorithms against historical data, comparing outcomes with traditional methods.
- Contribute to the formulation of a hybrid AI system by combining multiple algorithms to achieve optimal performance.
- Collaborate with project partners to establish GDPR-compliant controls in AI resource allocation, ensuring personal data protection and adherence to relevant regulations.
- Participate in the development and validation of proof-of-concept (PoC) AI solutions, working with QOCO and other partners to test these models with real-world data.
- Conduct customer interviews and gather feedback to refine PoC solutions, contributing to the project's success in achieving targeted business outcomes.
- Work closely with academic and industrial partners, including QOCO and the University of Limerick, to ensure alignment with project goals and successful delivery of research outputs.
- Prepare and present research findings in internal meetings, project reviews, and academic forums as required.
- Document research methodologies, experimental results, and project outcomes, ensuring clear and thorough reporting.
- Assist in the preparation of project reports and publications, contributing to the dissemination of research results.
- Role model the University's values & behaviours.
- Be responsible for ensuring that the information and records processed (received, created, used, stored, destroyed) on behalf of the University are managed in compliance with ALL applicable legislation, codes and policies e.g. Data Protection, Information Security and Records Management.

PERSON SPECIFICATION	ESSENTIAL	DESIRABLE
Education / Qualifications		
• PhD in Mathematics, Computing, Data Science, AI or a related discipline.	✔	
• Strong background in AI, machine learning, or data analytics with practical experience in algorithm development.	✔	
• Experience with AI applications in the aviation or logistics sectors.		✔
• Familiarity with GDPR regulations and their application in AI research.		✔

Skills / Experience

• Design and use of optimisation algorithms to solve combinatorial problems	✔	
• Implementation of optimisation algorithms in a programming language such as Python, Java, C++ or similar	✔	
• Designing and carrying out experiments to assess the problem-solving ability of an algorithm	✔	
• Familiarity with machine learning algorithms	✔	
• Excellent analytical and problem-solving skills with a focus on practical implementation.	✔	
• Ability to work collaboratively in a multidisciplinary and international research environment.	✔	
• Application of algorithms to real-world optimisation problems		✔
• Familiarity with genetic algorithms and similar stochastic optimisation techniques.		✔
• Experience in resource optimization, demand forecasting, or automated scheduling.		✔
• Knowledge of NLP, reinforcement learning, or event-driven architectures.		✔
• Experience in conducting research within an industrial collaboration framework.		✔
• Strong communication skills, including the ability to present complex information clearly to both technical and non-technical audiences.		✔