Master Thesis – Assessing the Sensitivity of Critical Roles to AI-Driven Workforce Transformation (30 credits / 20 weeks – 1 student)

About us

GKN Aerospace is the world's leading multi-technology tier 1 aerospace supplier. With 33 manufacturing locations in 12 countries, we serve over 90% of the world's aircraft and engine manufacturers. We design and manufacture innovative smart aerospace systems and components. Our technologies are used in aircraft ranging from the most used civil aircraft to the world's advanced 5th generation fighter aircraft and the Ariane orbital rockets used by ESA.

Project Background

Organizations across the aerospace industry are facing an increasing need to adopt Artificial Intelligence (AI), digital automation, and advanced engineering technologies. At the same time, many critical business processes rely on a limited number of highly experienced individuals, creating potential single points of failure and knowledge-retention risks.

As AI capabilities continue to evolve, particularly through Generative AI and emerging AI agents, organizations need a structured understanding of which critical tasks may be augmented by AI, which tasks will continue to depend heavily on human expertise, and which new competencies will be required in the future workforce.

To support future workforce planning and responsible AI adoption, there is a need to better understand how AI may affect critical tasks, knowledge dependencies, and competency requirements across engineering and support functions.

Assignment Description

This thesis project will investigate how Artificial Intelligence (AI) may impact selected critical engineering and support roles. The work will focus on identifying critical tasks, understanding knowledge dependencies, and assessing the potential for AI to augment, automate, or transform different tasks performed by these roles.

A major part of the project will involve engaging with stakeholders across the organization to develop a detailed understanding of role responsibilities, decision-making processes, specialist knowledge areas, and operational risks.

The expected tasks are as follows:

- Review literature related to AI, workforce transformation, task-based work analysis, and future skills.
- Interview selected critical role holders and/or their immediate managers.
- Map key responsibilities, decision-making activities, and knowledge dependencies associated with selected critical roles.
- Apply task decomposition methods to identify and classify critical tasks.
- Develop or adapt and validate a framework for assessing the sensitivity of critical tasks to AI technologies.

- Assess implications for future skills, workforce planning, and organizational capability development.
- Document and present the performed work.

Qualifications

- Pursuing a Master's degree in Industrial Engineering & Management, Engineering Management, Human Factors Engineering, Digital Transformation, Organisational Development or a related field.
- Strong interest in Artificial Intelligence, digital transformation, future ways of working, and organizational development.
- Foundational understanding of AI technologies and their application to knowledge-intensive and engineering work.
- Comfortable interacting with stakeholders at different organizational levels and conducting interviews, discussion groups and qualitative investigations.

Apply by

Send your resume and cover letter to Emily Carter – emily.carter@gknaerospace.com (supervisor).

Last date for application: 11 December 2026.