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ADOPTING ARTIFICIAL INTELLIGENCE (AI) TECHNOLOGIES IN THE SPACE DOMAIN: A UAE  
CASE STUDY

**Abstract**

The development of artificial Intelligence technologies are rapidly growing and evolving globally with use cases and applications in various sectors. The Space sector is one of the industries in which the adoption of new Artificial Intelligence technologies holds tremendous potential value. Examples include: operational planning, model optimization, and resource optimization, development of Fault Detection and Isolation Systems and in improving satellites Images, data and classifiers. Since the increase of commercial space in recent years, AI has been one of the key enablers for the advancement of space applications and deriving value from the immense data that is produced to support monetization efforts. In addition to the data analytics aspect, Artificial Intelligence will continue to be the cognitive basis for robotics, computer vision, Machine Learning, and many other critical aspects in the space domain. The main focus of this paper is on recent Artificial Intelligence tools that can be applied by research centers, academia, innovative startup institutions, and in particular such entities that operate in the space sector. Existing and future opportunities and challenges were analyzed to produce a set of recommendations to the UAE Space sector in adopting such technologies with a focus on bridging the gap between industry needs and potential opportunities.