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WINNER TAKES ALL? DEPLOYING ARTIFICIAL INTELLIGENCE FOR MILITARY ACTIVITIES IN OUTER SPACE

Abstract

The increasing integration of artificial intelligence (AI) into space-related activities has ushered in a new era of innovation and efficiency. AI algorithms can play a crucial role in optimizing mission planning and execution, analyzing vast amounts of data from satellites, and contributing to discoveries in astronomy and astrophysics, as well as enabling autonomous spacecraft maneuvering and enhanced autonomy of rovers.

However, such technological developments also present several legal challenges for existing international space law, particularly concerning the implications of any potential military activities in outer space. These challenges require a careful reflection of the fundamental principles set out in the 1967 Outer Space Treaty, including: Article IV, which does not expressly address the use of AI-enabled weapons; the notion of 'control' under Article VIII, due to the increasingly autonomous features of AI systems; Articles VI and VII in relation to international responsibility and international liability in situations where human supervision is limited or completely removed from the operation; and Article I, given that additional power imbalances arising from the use of AI in space may not be consistent with the principles of 'free access' and 'non-discrimination'.

This paper will assess whether, and to what extent, additional governance 'rules of the road' will be required to complement the UN Space Treaties in the face of, specifically, AI-enabled military activities.