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"NAVIGATING THE FINAL FRONTIER: ETHICAL AND REGULATORY CHALLENGES OF ARTIFICIAL INTELLIGENCE IN SPACE EXPLORATION"

Abstract

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Navigating the Final Frontier: Ethical and Regulatory Challenges of Artificial Intelligence in Space Exploration

Abstract

As technological advancements accelerate and human exploration extends beyond Earth, artificial intelligence (AI) emerges as a vital component in pushing the boundaries of space exploration. However, with these groundbreaking capabilities come complex ethical and regulatory challenges. This paper delves into the key issues associated with the use of AI in space missions, such as the autonomy of decision-making by AI systems beyond human control, and the potential risks these systems may pose in an unpredictable space environment. Moreover, it addresses critical concerns around ethical responsibility in the event of malfunctions or errors, the protection of sensitive data collected by these systems, and the impact of AI-driven exploitation of space resources on global equity.