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BEYOND THE STARS: VIRTUAL ACCESS TO GLOBAL SPACE HERITAGE

Abstract

Objective: This paper explores the transformative impact of digital technology on enhancing the accessibility and influence of space museums and societies worldwide. It investigates how virtual tours, augmented reality exhibits, and online educational resources can democratize access to space heritage and inspire global audiences, aligning with the mission of responsible space sustainability.

Methods: The research assesses the current role of space museums and societies as vital conduits for engaging the public with space science and history. It explores the integration of digital technologies like virtual and augmented reality into these institutions, examining how they can redefine visitor experiences and extend the reach of space education beyond physical boundaries. The study methodically evaluates an array of digital tools, including 3D virtual museum tours, AR applications, digital archives, and interactive educational platforms, and considers their potential in creating immersive and educational space-related experiences.

Results: The findings highlight the increasing role of digital technologies in transforming the way individuals interact with space heritage. Virtual and augmented reality tools are identified as key enablers of immersive and interactive learning, offering global audiences unprecedented access to space artifacts and narratives. The research underscores the enhanced accessibility and inclusivity provided by these technologies, enabling broader socio-economic and geographic participation in space science. Additionally, the study reveals the potential of digital platforms to foster collaborative exchanges among international space institutions, promoting a more interconnected global space community.

Conclusions: The paper concludes by underscoring the significant potential of digital technology to make space heritage and science more accessible and engaging to people worldwide. It advocates for strategic and collaborative efforts to integrate digital tools into the outreach and educational missions of space museums and societies. The study highlights the necessity of addressing challenges such as the digital divide, the sustainability of technological solutions, and the preservation of authenticity in space artifacts and experiences. By capitalizing on the opportunities presented by digital technology, space institutions can inspire a deeper curiosity about the cosmos, support lifelong learning, and cultivate a global community united by a shared interest in space exploration. The paper contributes to the discourse on employing technology for the responsible and sustainable dissemination of space knowledge and culture, aiming to guide and encourage further innovation in this domain.