

Beyond the stars, onto the stage: Robotics in art and space

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ABSTRACT

From uncharted caves to immersive performance spaces, robotics is increasingly called upon to operate in environments that defy traditional engineering assumptions. This keynote explores the parallel challenges and unexpected synergies between designing robots for space exploration and artistic expression. Through the lens of two projects—CAVERNAUTE, a foldable airship built for subterranean missions and performative storytelling, and ARIES, a spherical robot navigating rugged, GPS-denied environments—we reflect on how each domain pushes the limits of structure, autonomy, and human-robot interaction. Both demand not only technical ingenuity but also adaptability, resilience, and imagination. By bridging these seemingly disparate worlds, we uncover how poetic constraints can drive functional breakthroughs, and how the rigor of aerospace inspires novel forms of expressive motion.