Virginia Tech Faculty and Students Leverage Digital Technology to Reimagine Ancient Egypt

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A collaborative interdisciplinary team of faculty and students at Virginia Tech is pioneering an innovative project that digitally recreates artifacts and drawings from the tomb of the ancient Egyptian official Meketre. By harnessing cutting-edge digital technology, the project offers an immersive experience, allowing users to step into the world of Egypt as it existed thousands of years ago.

Led by Eiman Elgewely, assistant professor in the College of Arts, Architecture, and Design, the project, officially titled "Breathing Life into Meketre's Tomb Models in VR: A Spatial Storytelling Immersive Experience," is funded by the Institute for Creativity, Arts, and Technology (ICAT) and the Center for Human-Computer Interaction. The team comprises faculty and students from diverse disciplines, including architecture, interior design, computer science, and creative technologies.

The project focuses on digitally reconstructing relics discovered in Meketre's tomb in Luxor, which are currently housed in museums such as the Metropolitan Museum of Art in New York and the Cairo Museum in Egypt. Elgewely explained, "We are exploring how digital technology can enable a form of digital repatriation, offering both Egyptians and a global audience access to these cultural gems."

Utilizing early 20th-century excavation drawings, the Virginia Tech team has created digital replicas, including a 3D model of Meketre's garden courtyard. This process involved extensive research into ancient Egyptian art, architecture, and plant life to ensure historical accuracy. The resulting model has been adapted for various applications, including animation, web-based experiences, and virtual reality (VR).

Deepak Gupta, a master's graduate in computer science, played a key role in developing the interactive VR exhibition using Unreal Engine. The VR experience allows users to explore the reconstructed garden, interacting with elements such as AI-driven fish in a pool. A version of the project was recently showcased at the Virginia Tech Science Festival, providing an engaging educational experience for visitors.

Elgewely emphasized the interdisciplinary nature of the project, stating, "The opportunity for interior design students to collaborate with computer science students is invaluable." This collaboration provides students with hands-on experience with new technologies and fosters cross-disciplinary communication and innovation.

The latest iteration of the Meketre project will be unveiled at ICAT Day on May 5th at the Moss Arts Center, offering the public a firsthand opportunity to experience the digitally reimagined world of ancient Egypt. This project exemplifies Virginia Tech's commitment to innovative research and the use of technology to enhance learning and cultural understanding.