

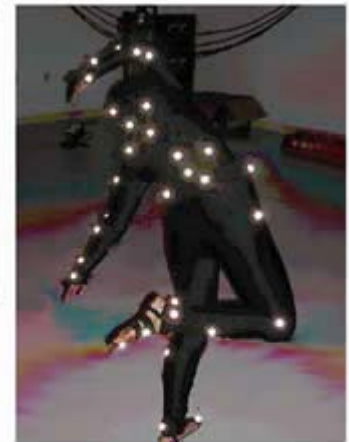
UTD IN ACTION: LIGHTS, CAMERA, MOCAP

The same technological wizardry known as “motion capture (MOCAP)” that helped create the villainous Gollum in *Lord of the Rings* and the appealing characters in *Polar Express* has come to UTD.

The university now houses one of the most sophisticated motion capture laboratories in the nation. The laboratory is a large television studio (40 feet square) with sixteen cameras mounted on the walls surrounding a performance space. The cameras project a strobe of light at more than 222 times per second, then “capture” the light as it bounces off a series of reflectors worn by the subject in the performance space. At least three cameras must capture light simultaneously from each reflector. This information is transmitted in digital form to computers in a control room. The computers then create related “motion paths” that can be converted into an incredibly accurate three-dimensional portrayal of the movement that has taken place.



The Sixteen-Camera Motion Sensor Laboratory at the Institute for Interactive Arts and Engineering at UTD



Captured motion has a wide and significant range of practical applications. It can serve as the basis of the remarkably life-like animations that make movies and video games so appealing and it plays a vital role in the creation of “virtual environments” that make powerful interactive educational exercises. For example, airline pilots can learn to respond to emergencies and soldiers can train for the dangers of battle in simulated virtual environments. Potential medical applications for this technology include biomedical research, prostheses, spinal cord injuries and bio mechanisms. Already integrated into our daily lives, motion-capture technology has been adapted to commonplace uses such as improving golfers’ swings or dancers’ leaps.

Funded as part of Project Emmitt, the new laboratory is part of the Institute for Interactive Arts and Engineering, a collaborative endeavor of the School of Arts and Humanities and the Erik Jonsson School of Engineering and Computer Science. The institute is dedicated to the mutually productive interaction of the creative arts with digital technology. It is a place where real science and innovative art are fashioning the future of higher education.

The laboratory, which features some of the best available technology and equipment in the world, will be used by researchers from the institute and by students in computer science and in arts and technology. But the irresistible combination of art and technology has extended its allure well beyond the UTD campus—the newly created lab has already attracted interest from area industries for collaborative research efforts.

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