Center for Human Modeling and Simulation
University of Pennsylvania

In January 1994, the former Computer Graphics Research Laboratory of the Computer and Information Science Department became the Center for Human Modeling and Simulation (HMS). Research on human body modeling and simulation had been underway in the laboratory since 1975. The lab achieved international recognition for its research and specifically for the Jack software, which is now a commercial software package marketed by EDS. To date HMS faculty have produced over 75 Ph.D. students.

Our new LiveActor facility is comprised of three key elements: a motion capture device, a stereo display wall, and technical excellence.

- Ascension Technology's ReActor is an active marker, optical motion capture device. The untethered motion capture suit worn by the capture subject consists of 30 markers and a battery pack. Infrared signals from the markers are received by 540 sensors mounted on a 3m x 4.2m x 2.4m frame. Data is collected by these sensors and sent to a PC at a rate of 900 measurements per second. Via Kaydara's FilmBox (MOCAP), data from the ReActor can be used in most major animation packages including Alias|Wavefront's Maya and Discreet's 3D Studio Max. The ReActor has no metallic distortion, which allows props to be used during the capture secessions. These factors combined with its insensitivity to changes in lighting made the ReActor a perfect choice as the motion capture device for LiveActor.
- LiveActor's stereo display wall consists of four DLP projectors, two Cyviz stereo converters, linear polarizer filters and glasses, a PC with an nVidia Quadro 4 card, and a 15' x 6' polarization preserving screen. The display wall supports a resolution of 2560 x 1024 dpi at a rate of 100Hz. Currently, stereo simulations are created in and displayed through EON Reality software. EON Studio supports most major 3D data formats, and in addition to being displayed in stereo on the projection screen, simulations can easily be exported to a website or CD.
- The LiveActor facility draws technical and artistic expertise from both the Center for Human Modeling and Simulation's 12 Ph.D. candidates and Digital Media Design's 80 undergraduates. Together these students offer valuable skills in 3D modeling and animation, motion capture consulting, file translations, design and presentation, post production, rendering, and simulations and virtual worlds.

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For more information on LiveActor, visit our website: http://hms.upenn.edu/LiveActor

If you are interested in using the LiveActor facilities, please contact:

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