Docket #: S08-122

Mesh-based Performance Capture from Multi-view Video

Researchers from Stanford University and the Max Planck Institute have patented a new marker-less approach to capturing human performances from multi-view video. This algorithm jointly reconstructs spatio-temporally coherent geometry, motion and textural surface appearance of actors that perform complex and rapid moves. Compared to current methods, this invention has a higher level of detail and flexibility, is highly versatile, and is applicable to many complex types of scenes that cannot be handled by alternative marker-based or marker-free recording techniques. Users can even capture fast and complex motion by actors wearing loose, everyday apparel. The publication and video for this invention can be viewed at the link below.
"Performance Capture from Sparse Multi-view Video"

Related Markerless Motion Capture Technologies also available for license:
S05-433- US Patent 7,804,998
S06-193- US Patent 8,139,067
S07-254- US Patent 8,180,714

Figure



Applications

- Movie industry and special effects
- Gaming
- 3D video

Advantages

- Marker-less approach
- Combines new skeleton-less shape deformation methods, a new analysis-through-synthesis framework for pose recovery, and a new model-guided multi-view stereo approach for shape refinement
- Higher level of detail and flexibility, highly versatile, applicable to many complex types of scenes that cannot be handled by alternative marker-based or marker-free recording techniques
- Enables simultaneous capture of shape, motion and texture of people wearing everyday apparel
- Requires less setup time

Publications

- Robson, David. "Motion-capture system adds costume to the drama". NewScientistTech.com. 29 May 2008.

- de Aguiar, Edilson; Stoll, Carsten; Theobalt, Christian; Ahmed, Naveed; Seidel, Hans-Peter; Thrun, Sebastian; *Performance Capture from Sparse Multi-view Video* ACM Transactions on Graphics (SIGGRAPH 2008)
- Theobalt, Christian; de Aguiar, Edilson; Stoll, Carsten; Seidel, Hans-Peter; Thrun, Sebastian; *Book chapter: Performance Capture from Multi-view Video Image and Geometry Procesing for 3D-Cinematography (Springer, 2010)*

Patents

- Published Application: 20090284529
- Published Application: WO2009140261

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