



Video:

Photoreal Prototype Character for OnLive™ : Geni4 I: In this computer-generated face, Contour was used to drive 150 3D data points to control the subtle skin motion of the face. This is a small fraction of the hundreds of thousands of 3D points that Contour captures during a live performance, but the motion still achieves a level of realism that is approaching that of live action.

Note: Video is available in multiple sizes and formats.

Actress: Sally Clawson

Source: Mova

Photoreal Prototype Character for OnLive™ : Geni4 II: In this computer-generated face, Contour was used to drive 150 3D data points to control the subtle skin motion of the face. This is a small fraction of the hundreds of thousands of 3D points that Contour captures during a live performance, but the motion still achieves a level of realism that is approaching that of live action.

Note: Video is available in multiple sizes and formats.

Actress: Sally Clawson

Source: Mova

Photoreal Prototype Character for OnLive™ : Geni4 III: In this computer-generated face, Contour was used to drive 150 3D data points to control the subtle skin motion of the face. This is a small fraction of the hundreds of thousands of 3D points that Contour captures during a live performance, but the motion still achieves a level of realism that is approaching that of live action.

Note: Video is available in multiple sizes and formats.

Actress: Sally Clawson

Source: Mova

Photoreal Prototype Character for OnLive™ : Geni4 IV: In this computer-generated face, Contour was used to drive 150 3D data points to control the subtle skin motion of the face. This is a small fraction of the hundreds of thousands of 3D points that Contour captures during a live performance, but the motion still achieves a level of realism that is approaching that of live action.

Note: Video is available in multiple sizes and formats.

Actress: Sally Clawson

Source: Mova

Real-time In-game Animation: Wrestler: This photoreal CG head is driven with data from a Contour capture, and imported into Epic's Unreal® Engine 3. Contour capture data gives this head its incredibly life-like motion and realism, even while it plays in real-time in a game engine.

Note: Video is available in multiple sizes and formats. This is a video version of the photo: MOVA_Contour_Unreal.jpg

Actor: David Cooley

Source: Mova

Photoreal Facial Animation: Gangster: In this computer-generated face, Contour was used to drive 700 3D data points to control the subtle skin motion of the face and neck. This is a small fraction of the hundreds of thousands of 3D points that Contour captures during a live performance, but the motion still achieves a level of realism that is approaching that of live action.

Note: Video is available in multiple sizes and formats. This is a video version of the photo: MOVA_Contour_mentalray.jpg

Actor: David Cooley

Source: Mova

Photoreal Facial Animation: Wrestler: In this computer-generated face, Contour was used to drive 700 3D data points to control the subtle skin motion of the face and neck. This is a small fraction of the hundreds of thousands of 3D points that Contour captures during a live performance, but the motion still achieves a level of realism that is approaching that of live action.

Note: Video is available in multiple sizes and formats. This is a video version of the photo: MOVA_Contour_mentalray.jpg

Actor: David Cooley

Source: Mova

Photoreal CG Character: Replica of Performer: Contour can be used to create photoreal CG characters that look and move exactly like the performer. This example shows video from a capture session of actor David Cooley, captured and tracked by Contour, side by side with the final CG head that was made to look like the actor.

Note: Video is available in multiple sizes and formats.

Actor: David Cooley

Source: Mova

Retargeting Example: Jessiqa to David: Contour data can be used to retarget motion from any performer onto any CG head model. This example shows capture data from a female performer, Jessiqa, being used to drive the photoreal CG head of a male character, David.

Note: Video is available in multiple sizes and formats.

Actors: Jessiqa Pace, David Cooley

Source: Mova

Retargeting Example: Tekla to David: Contour data can be used to retarget motion from any performer onto any CG head model. This example shows capture data from a female reporter from IEE Spectrum Magazine, Tekla Perry,, being used to drive the photoreal CG head of a male character, David.

Note: Video is available in multiple sizes and formats.

Actors: Tekla Perry, David Cooley

Source: Mova

Contour Production Phases: From left to right, synchronized to rapidly flashing lights, an array of cameras capture both the normally illuminated Live Performance (leftmost), and the Phosphorescence of special makeup used to produce 3-D Surface Geometry (next) of the performer with sub-millimeter precision. After the capture session, Retrospective Vertex Tracking allows special effects experts to create a tracking mesh that can look exactly like the performer, or can be reshaped to change the age of the performer, make the performer look exactly like a historical figure, or turn the performer into a fantasy creature. The Live Performance is then mapped onto the Surface Geometry to create photoreal Textured Geometry (next).

Note: Video is available in multiple sizes and formats. This is a video version of the photo: Mova_Contour_reality_capture_Before_and_After_4_Stages_3.jpg

Model: Jessiqa Pace

Source: Mova

Face, Shoulders and Cloth: From Live performance (left) to Phosphorescence (next) to Surface Geometry (next), to Photoreal 3-D computer-generated image (right), the Contour Reality Capture System recreates in 3-D every nuance of the original performance, capturing both the subtle deformations of skin as well as the complex folding of cloth. Synchronized to rapidly flashing lights, an array of cameras capture both the normally illuminated image (left), and the glow of phosphorescent makeup (center) and triangulate on the random phosphorescent patterns to produce a 3-D image (right) of the performer with sub-millimeter precision.

Note: Video is available in multiple sizes and formats.

Model: Sarah Stouffer

Source: Mova

Photos:

MOVA_Contour_Geni4.jpg: In this computer-generated face, Contour was used to drive 150 3D data points to control the subtle skin motion of the face. This is a small fraction of the hundreds of thousands of 3D points that Contour captures during a live performance, but the motion still achieves a level of realism that is approaching that of live action.

Actress: Sally Clawson

Mandatory Photo Credit: Mova

MOVA_Contour_Unreal.jpg: This photoreal CG head is driven with data from a Contour capture, and imported into Epic's Unreal® Engine 3. Contour capture data gives this head its incredibly life-like motion and realism, even while it plays in real-time in a game engine.

Actor: David Cooley

Mandatory Photo Credit: Mova

MOVA_Contour_mentalray.jpg: In this computer-generated face, Contour was used to drive 700 3D data points to control the subtle skin motion of the face and neck. This is a small fraction of the hundreds of thousands of 3D points that Contour captures during a live performance, but the motion still achieves a level of realism that is approaching that of live action.

Actor: David Cooley

Mandatory Photo Credit: Mova

MOVA_Contour_wireframe.jpg: This example shows meshes generated from the same Contour facial capture. On the left: a low-density mesh with 700 data points; on the right: a high-density mesh with 3000 data points.

Mandatory Photo Credit: Mova

Model_being_prepared_for_a_Mova_Contour_reality_capture_session1.jpg: Instead of using dozens of glued-on markers, like a conventional motion capture system, the Contour Reality Capture System uses lightly sponged-on phosphorescent makeup. So, rather than capturing at most 200 3-D points on a face, Contour captures over 100,000 3-D points, with sub-millimeter precision.

Model: Jessiqa Pace

Make-Up Artist: Robin Fontaine

Mandatory Photo Credit: Thomas Heinser

Model_being_prepared_for_a_Mova_Contour_reality_capture_session2.jpg: Instead of using dozens of glued-on markers, like a conventional motion capture system, the Contour Reality Capture System uses sponged-on phosphorescent makeup. So, rather than capturing at most 200 3-D points on a face, Contour captures over 100,000 3-D points, with sub-millimeter precision.

Model: Sarah Stouffer

Make-Up Artist: Robin Fontaine

Mandatory Photo Credit: Austin Hice

Model_beginning_a_Mova_Contour_reality_capture_session3.jpg: The actor is captured by an array of high-precision digital cameras, and lit by customized fluorescent lamps that flash 90 to 120 times per second, beyond the threshold of human perception.

Model: Jessiqa Pace

Mandatory Photo Credit: Thomas Heinser

Mova_Contour_reality_capture_Before_and_After_4_Stages_1.jpg:From Live Performance (top left) to Photoreal 3-D computer-generated image (bottom right), the Mova Contour Reality Capture System recreates in 3-D every nuance of the original performance. Synchronized to rapidly flashing lights, an array of cameras capture both the glow of phosphorescent makeup, which is used to reconstruct a 3-D surface with thousands of points that can be tracked, and the normally illuminated image (top left) that can be used to create a realistic texture to map back onto the 3-D surface. The result is a completely photoreal 3-D image (bottom right) of the performer with sub-millimeter precision.

Model: Jessiqa Pace

Mandatory Photo Credit: Mova

Mova_Contour_reality_capture_Before_and_After_4_Stages_2.jpg:From Live Performance (top left) to Photoreal 3-D computer-generated image (bottom right), the Mova Contour Reality Capture System recreates in 3-D every nuance of the original performance. Synchronized to rapidly flashing lights, an array of cameras capture both the glow of phosphorescent makeup, which is used to reconstruct a 3-D surface with thousands of points that can be tracked, and the normally illuminated image (top left) that can be used to create a realistic texture to map back onto the 3-D surface. The result is a completely photoreal 3-D image (bottom right) of the performer with sub-millimeter precision.

Model: Tekla Perry

Mandatory Photo Credit: Mova

Mova_Contour_reality_capture_Before_and_After_4_Stages_3.jpg: From Live Performance (left) to Photoreal 3-D computer-generated image (right), the Mova Contour Reality Capture System recreates in 3-D every nuance of the original performance. Synchronized to rapidly flashing lights, an array of cameras capture both the glow of phosphorescent makeup, which is used to reconstruct a 3-D surface with thousands of points that can be tracked, and the normally illuminated image (left) that can be used to create a realistic texture to map back onto the 3-D surface. The result is a completely photoreal 3-D image (right) of the performer with sub-millimeter precision.

Model: Jessiqa Pace

Mandatory Photo Credit: Mova

Mova_Contour_reality_capture_Before_and_After_2_Stages_1.jpg: From Live Performance (left) to Photoreal 3-D computer-generated image (right), the Mova Contour Reality Capture System recreates in 3-D every nuance of the original performance. Synchronized to rapidly flashing lights, an array of cameras capture both the normally illuminated image (left) and the glow of phosphorescent makeup and then use the random phosphorescent patterns to produce a completely photoreal 3-D image (right) of the performer with submillimeter precision.

Model: Sarah Stouffer

Mandatory Photo Credit: Mova

Mova_Contour_reality_capture_Before_and_After_2_Stages_2.jpg: From Live Performance (left) to Photoreal 3-D computer-generated image (right), the Mova Contour Reality Capture System recreates in 3-D every nuance of the original performance. Synchronized to rapidly flashing lights, an array of cameras capture both the normally illuminated image (left) and the glow of phosphorescent makeup and then use the random phosphorescent patterns to produce a completely photoreal 3-D image (right) of the performer with submillimeter precision.

Model: Sarah Stouffer

Mandatory Photo Credit: Mova

Mova_Contour_reality_capture_Before_and_After_2_Stages_3.jpg: From Live Performance (left) to Photoreal 3-D computer-generated image (right), the Mova Contour Reality Capture System recreates in 3-D every nuance of the original performance. Synchronized to rapidly flashing lights, an array of cameras capture both the normally illuminated image (left) and the glow of phosphorescent makeup and then use the random phosphorescent patterns to produce a completely photoreal 3-D image (right) of the performer with submillimeter precision.

Model: Sarah Stouffer

Mandatory Photo Credit: Mova

Mova_Contour_reality_capture_Before_and_After_2_Stages_4.jpg: From Live Performance (left) to Photoreal 3-D computer-generated image (right), the Mova Contour Reality Capture System recreates in 3-D every nuance of the original performance. Synchronized to rapidly flashing lights, an array of cameras capture both the normally illuminated image (left) and the glow of phosphorescent makeup and then use the random phosphorescent patterns to produce a completely photoreal 3-D image (right) of the performer with sub millimeter precision.

Model: Sarah Stouffer

Mandatory Photo Credit: Mova

Mova_Contour_reality_capture_Before_and_After_3_Stages_1.jpg: From Live Performance (left) to Phosphorescence (center) to Photoreal 3-D computer-generated image (right), the Mova Contour Reality Capture System recreates in 3-D every nuance of the original performance. Synchronized to rapidly flashing lights, an array of cameras capture both the normally illuminated image (left), and the glow of phosphorescent makeup (center) and then use the random phosphorescent patterns to produce a completely photoreal 3-D image (right) of the performer with sub-millimeter precision.

Model: Sarah Stouffer

Mandatory Photo Credit: Mova

Mova_Contour_reality_capture_session_in_progress-1.jpg: The Mova Contour Reality Capture System recreates in photoreal 3-D every nuance of an actor's live performance. Synchronized to rapidly flashing lights, an array of cameras capture both the normally illuminated image of the performer, and the glow of phosphorescent makeup and then use the random phosphorescent patterns to produce a completely photoreal 3-D image of the performer with sub-millimeter precision.

Model: Sarah Stouffer

Mandatory Photo Credit: Paul Trapani

Mova_Contour_reality_capture_session_in_progress-2.jpg: The Mova Contour Reality Capture System recreates in photoreal 3-D every nuance of an actor's live performance. Synchronized to rapidly flashing lights, an array of cameras capture both the normally illuminated image of the performer, and the glow of phosphorescent makeup and then use the random phosphorescent pattern to produce a completely photoreal 3-D image of the performer with submillimeter precision.

Model: Sarah Stouffer

Mandatory Photo Credit: Paul Trapani

Steve_Perlman_and_model_in_front_of_Mova_Contour_reality_capture_system.jpg: Steve Perlman (right), Founder and President of Mova, beside his Contour Reality Capture System, which uses two arrays of synchronized digital cameras to record 3-D geometry and visual texture. The model is lit by customized fluorescent lights that serve both to recharge the phosphorescent makeup and

provide scene lighting. An entrepreneur and inventor, Perlman is the main architect of the Contour Reality Capture System. The holder of over 80 patents, he is particularly well-known for creating WebTV and leading the development of the technology underlying QuickTime.

Model: Sarah Stouffer

Mandatory Photo Credit: Paul Trapani

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