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Wikipedia

LightStage

LightStage

LightStage is a technology for digitally capturing images of real objects , mainly people , and creating their three-dimensional dynamic digital images based on the data obtained . " LightStage " can create digital images of objects , mostly human faces , both statically and dynamically _ _ _ . Initially , this technology was developed _by a_ team _of_ researchers _from_ the Institute _for_ Creative Technologies at _the University of Southern California_ , led by _Paul_ Debevec , _Ph.D._ _ _ _ Subsequently, the development and support of technology " LightStage " _._ the company of the same name began to work , the founder and CEO of which is Jules Urbach [1] . Currently , LightStage is positioned as part of the AMD Cinema 2 _ _ _ _ _ _ 0 ", which is created and promoted by the joint efforts of AMD , OTOY , LightScape and LightStage itself [2] .

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Description

Images.png **External media**

Images

Image-silk.png Photograph of a special room equipped with hundreds of high - speed cameras . (1024 x 682 pixels , Joystiq.com [3]) _ _ _ _

Image-silk.png An intermediate stage in creating a digital model is the processing of surface normals . (640 x 479 pixels , Joystiq.com [3]) _ _ _

Video files

Silk-film.png Digital Emily CAF Video - the process of creating a digital dynamic image of the face of actress Emily O'Brien (132 MB , ITC website)

" LightStage " is designed to create predominantly digital images of the face , and the subsequent modeling of facial expressions and speech . The process of creating a digital copy of a face consists of several stages . First, a person goes through the process of intensive photography with special high-speed digital cameras in a specially equipped room [3] . Then, by means of software processing , a three-dimensional digital model of the face is created , the " movements " of which can be controlled in any order [4] .

LightStage is focused on use in movies , commercials and simulations , and after joining the AMD Cinema 2 _ _ _ _ 0 "- in computer games , the main difference of which from films is interactivity .

Story

Paul Debevec , researcher and scientist working at the Institute for Creative Technologies _at_ the _Institute for Creative Technologies_ at _the_ University _of_ Southern California , Ph.D. _since_ 1996 , _in the_ late _90s together _ _ _ _ _ _ _ _ _ _ _ with his team began the development of technology " LightStage " [5][6] . Subsequently, this technology was used in the films Spider - Man 2 , Spider - Man: The Enemy in Reflection , Superman Returns , King Kong , Hancock and The Curious Case of Benjamin Button [7] .

In early August 2008 , AMD held a press event in New York City showing LightStage technology and its relationship to AMD Cinema 2 . _ _ _ _ _ _ _ _ _ 0 » [8] . The presentation was attended by Splash Damage , Crytek , Rebellion Developments , Remedy Entertainment and Blizzard Entertainment , who have expressed interest in the technology [3] . The presentation showed a video showing the complete process of creating a digital image _of the_ face _of_ actress Emily O'Brien (eng_ Emily O'Brien) : from photographing and shooting to the finished result . In addition _to_ LightStage , Image Metrics also contributed to this presentation . _ _ _ _ [4]

In the first half of January 2010 , it became known that _on_ February 20, _2010_ at Beverly Hills , the _Academy_ of _Motion Picture Arts_ and Sciences _will present_ an award to the creators of LightStage technology - Paul Devebeck , Tim Hawkins (_eng_ _Tim Hawkins_) _John Monos (English _John Monos_) and Mark Segar (English _Mark_ Sagar) . [9]

The latest use of LightStage technology was in the making of the film TRON : Legacy _ _ " LightStage " was used to create the image of a young Kevin Flynn , the character of Jeff Bridges . Using " LightStage ", a model of the young Bridges' face was first scanned . and then Bridges himself . _ _ [10]

Notes

1. ↑ Jules Urbach Profile _ _ _ CrunchBase . — Jules Urbach 's CrunchBase profile . _ Archived from the original on June 5 , 2011 . Retrieved 23 December 2009 .
2. ↑ _Peter Petrov_ AMD Cinema 2 . 0: movies and games have become indistinguishable . 3DNews (August 13 , 2008). Retrieved 23 December 2009 .
3. ↑ [1 2 3 4] _Andrew Yoon_ AMD Cinema 2 . 0 tech demo: real - time photo - realistic human models (English) . Joystiq . com (August 12 , 2008). Archived from the original on June 5 , 2011 . Retrieved 23 December 2009 .
4. ↑ [1 2] _Peter Plantec_ The Digital Eye : Image Metrics Attempts to Leap the Uncanny Valley 4 . _ _ Animation World Network (_English_) (August 7 , 2008). Archived from the original on June 5 , 2011 . Retrieved 23 December 2009 .
5. ↑ _Paul Debevec_ Acquiring the Reflectance Field of a Human Face . _ _ _ debevec . org (April 10 , 2004). Archived from the original on April 10, 2012 . Retrieved 23 December 2009 .
6. ↑ _Paul Debevec_ A Lighting Reproduction Approach to Live - Action Compositing . _ _ _ debevec . org . (unavailable link - history) Retrieved December 23, 2009 .
7. ↑ About LightStage _ _ _ official website of the company LightStage . (unavailable link - history) Retrieved December 23, 2009 .
8. ↑ _Accent_ AMD showed the possibilities of Cinema 2 . 0 - the line between computer games and reality is getting thinner . iXBT . com (August 14 , 2008). Archived from the original on June 5 , 2011 . Retrieved 23 December 2009 .
9. ↑ _Gleb Lebedev_ The creators of Light Stage will receive their well-deserved award . gamedev . ru (January 12 , 2010). Archived from the original on June 5 , 2011 . Retrieved 13 January 2010 .
10. ↑ _Mike Seymour_ TRON : Legacy . Face off _ _ fxguide (December 21 , 2010). Archived from the original on April 13, 2012 . Retrieved 7 January 2011 .

External links

- **lightstage . com** -the official website of LightStage(asof January 2011 unavailable)
- High Resolution Face Scanning for " Digital Emily " a collaboration between Image Metrics and the USC Institute for Creative Technologies Graphics Lab _ _ _ _ ICT Graphics Lab . — A detailed description of the process of creating a digital image of a human face , with illustrations and videos . Archived from the original on June 5, 2011 . Retrieved 23 December 2009 .

Categories:
- Film and video technologies
- computer animation

computer animation

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OTOY - OTOY is a set of hardware and software solutions, methods and tools designed to process graphical calculations on the server side and send the results in the form of an audio and video stream to a client on a web browser via network connections, ...   *Wikipedia*

Devebeck - Devebeck, Paul Paul Debevec is an American researcher and scientist in the field of computer graphics. Works at the Institute for Creative Technologies at the University of Southern California [remove ... ... *Wikipedia*

Paul Debevec Paul Debevec is an American computer graphics researcher and scientist. Works at the Institute for Creative Technologies at the University of Southern California ... ...   *Wikipedia*

AMD Cinema 2.0 - Cinema 2.0, as described by Advanced Micro Devices (AMD), is the new gaming experience brought by the Radeon HD 4800 series GPUs with teraFLOPS computing capabilities, and leading edge solutions from partners to enable photorealistic graphics... ...   *Wikipedia*