

The Making of Avatar. HD Video

All the James Cameron's revolution in this 22-minute documentary

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A number of revolutionary visual effects techniques were used in the production of Avatar. According to Cameron, work on the film had been delayed since the 1990s to allow the techniques to reach the necessary degree of advancement to adequately portray his vision of the film. The director planned to make use of photorealistic computer-generated characters, created using new motion-capture animation technologies he had been developing in the 14 months leading up to December 2006.

Innovations include "The Volume", a motion-capture stage six times larger than any previously used, and an improved method of capturing facial expressions, enabling full performance capture. To achieve the latter, actors wore individually made skull caps fitted with a tiny camera positioned in front of the actors' faces; the information collected about their facial expressions and eyes is then transmitted to computers. According to Cameron, the method allows the filmmakers to transfer 100% of the actors' physical performances to their digital counterparts. Besides the performance capture data which were transferred directly to the computers, numerous reference cameras gave the digital artists multiple angles of each performance.

div.overlay { width:1040px; height:644px; } #imgplay { margin:88px 0px 0px 190px; } #player { background:no-repeat url('/videos/news/2010/january/creatingavatar.jpg') top center; } #splash, #player, #player embed, #player object { width:560px; height:340px; }

Digital effects rendering was performed at Weta Digital's data centre in Wellington, New Zealand. The 10,000-square foot server farm makes use of 4,000 Hewlett-Packard servers, and occupies the 193 spot in the Top 500 list of the world's most powerful supercomputers. Creating the virtual world of Pandora required over a petabyte of digital storage. Each minute of the final footage for Avatar occupied 17.28 gigabytes of storage. To help finish preparing the special effects sequences on time, Industrial Light & Magic was brought on board, working alongside Weta Digital to create the battle sequences.

More Information at www.avatarmovie.com. Image and Video Courtesy of 20th Century Fox. Video Encoding: 3Dup.com