# Computer generated imagery in movie production

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The use of computer imaging to create reality in films has been there for a long time. In early 1990s, the development of the film Jurassic Park was the first movie project to use computer aided graphic design to create reality in a film. However, computing technology and especially Computer Generated Imagery (CGI) technology was not advanced at the time and film makers could not depend too much on it. Two decades later, there have been many advances in the creation of reality in films using computer generated imagery (CGI). A good example of this is the development of the movie Avatar in 2009 and its sequel expected to be out by 2016. These new techniques include the use of motion capture or motion tracking.

Avatar used this extensively especially in the development of some scenes which required the performance of the actor to be well captured. The use of motion or performance capture is done with a set of equipment. The first set includes sensors which are placed on the strategic locations where they can sense the motions of the individual. These sensors are then connected to a computer or a colony of computers which analyse the data collected by the sensors and they use this data to apply it to the animate objects. In Avatar, this method was used to capture the facial performance of the actors such as the movement of the lips, the eyes and the cheeks and the data was then used to animate the non-human characters.

Motion-capture suits were also used to capture the motion of the whole body. The director of the movie thought it would be necessary to use this technology rather than completely depending on onscreen animation. The actors would wear special suits such as the leotard with sensors attached all over it (Johnson para 4). Each sensor has a computing capability making it

possible for it to collect data and send it to a computer which would then analyse the data and create motion data for the computer graphics. In the making of Avatar, unlike in the making of Jurassic Park, the technology was developed specifically for the development of the movie. So, unlike in Jurassic Age where CGI was used as a way to complement the other techniques used to create reality, such as animatronics, CGI in Avatar was developed specially to the development of the movie. James Cameron, the director of Avatar spent over a decade developing this technology. This included special stereoscopic cameras which were able to capture the actions of the actions and effectively transfer this to the computer models such as the Navi monkey-like beings. More importantly, special lighting was also used in the development of the film in order to help in the creating of better reality. The motion capture stage was more than five feet bigger than any that has been used in the making if a CGI-aided movie and this made it easier for as much data as possible to be collected.

Works Cited

Johnson, Bobbie. The technological secrets of James Cameron's new film Avatar: How the director has taken 3D film technology to the next level in his new blockbuster. 20 August 2009. 19 September 2013 .