

Motion capture used in the game industry

The demanding of animations in the game industry has rapidly grown since the 90s. People would like to see more realistic characters and more humanoid monsters instead of using game characters with cube heads and limbs fighting lifeless creatures. In fact, video games produced in recent years grew fast on bringing characters more emotion, mostly on facial expression, and make game scenes way more immersive, for example, *Detroit: Become Human* and *God of War (2018)*. This can be attributed to significant advances made in mo-cap technology of the past few decades. Even more surprisingly, in *Detroit: Become Human* and *Death Stranding*, we are seeing in-game characters looks almost exactly like the actors. If we try to understand how the mo-cap technique is being used in games, then we must know which software or systems are currently being used in the game industry.



Detroit: Become Human

<https://www.usgamer.net/articles/01-06-2018-detroit-become-human-guide-tips-tricks-walkthroughs/detroit-voice-actors-guide>



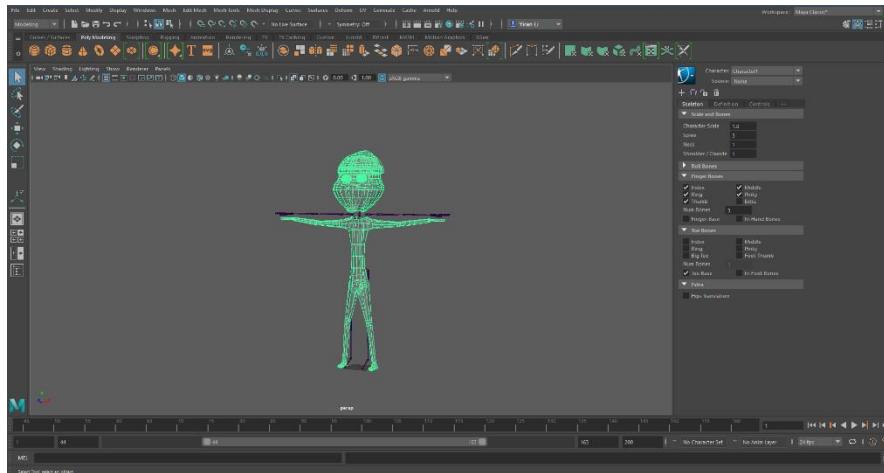
God of War

<https://mhamed-hassine-fantar.com/sunny-suljic-voice-actor.html>

In fact, There are various systems in use - the most widespread are optical systems such as those made by Vicon and OptiTrack and inertial systems such as the Xsens and Synertial/Animazoo. Optical systems are more accurate, inertial systems are less cumbersome and don't require optical markers. Sometimes these approaches are combined for full performance capture, using an inertial system for body motion and optical markers for hand and facial capture. These approaches are quite standard for most fields where motion capture is used, outside of medical biomechanics applications.

However, these systems are basically widely used in studios and companies, which indicates the budget of using mo-cap in game development might be a really high cost. According to statistics, many large AAA game studios with full motion capture setups starting in excess of 10 thousand dollars the US all the way up to above \$100 000 (*Motion Capture On An Indie Budget, Benjamin Swinbanks, founder, creative director - Simmersive Digital*). Such amount of cost is often well beyond for an indie game developer. So, is it possible for indie developers to have a cost-effective solution to this problem?

Some approaches are actually worth trying. If the majority of your mo-cap demand does not include facial expression, the HumanIK tool in Maya can do the job. Instead of using cameras and suits to capture an actors' motion, Maya already has some pre-set mo-cap assets. So it should meet the basic requirement of rigging characters and move them naturally. Inside Maya, you can use HumanIK to add rigs on your character and implement it in pre-planted mo-cap examples or transfer your own mo-cap data into Maya.



Other choices are professional mo-cap software, they provide actual 3D human body motions capturing function but also cost more than Maya. One of those software which are widely used is named iPi soft.

Motion Capture for the Masses

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Customer Highlights

Using iPi Mocap saved us countless weeks of character animation production and gave us stunning results that looked triple A

Paul Olsen, N3V Games

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Product Configurations

We provide a number of options, so if you are a studio, freelance animator or hobbyist, there's a license for you.

| | | |
|-------------------|---|---------|
| Free Trial | - | \$0 |
| Express | - | \$195 |
| Basic | - | \$695 |
| Pro | - | \$1,995 |
| Biomech Add-on | - | \$995 |
| Automation Add-on | - | \$995 |

The process is similar in many ways to larger more mainstream options - where in that an actor's movements are tracked via an array of cameras capturing multiple angles of the performance, then using those movements to drive the bones of a digital character. In this way, the extra budget except buying the software would be a couple of cameras which are considerable for indie developers. With software and hardware, the next issue is shooting locations and light setting, besides, the final result might be hundreds of gigabytes of raw footage to be processed. But all these problems are adjustable and low cost for indie games.