Real-Time puppet motion capture for 3D animation purposes

Motion capture is a widely used procedure in the media industry to allow life-like movements to digital characters. Nowadays a great variety of methods is available to capture motion of the human body, which is subsequently transfered to a digital character. A well-known technique is the placement of LEDs on the humans joints that are tracked over time. Others include the usage of sensors and magnetic fields or exosceletons to receive position data from the joints.

However, most systems are quite expensive, as many resources are required. Additionally they are restrictive due to the technical devices on the body. Furthermore the procedure necessitates much space as a full-body recording is aimed for. Performing Motion Capture in real-time to transfer the data directly on a digital representation poses another significant challenge. All those circumstances prevent private customers to take advantage of this technology for animation purposes .

The latest developments aim for markerless Motion capture, that requires no external devices on the human body. By doing so, it offers an inexpensive and straightforward method with no physical restrictions, as only one or two basic cameras or webcams are required. To make optimal use of the available space and enable Motion capture for an individual animator, a small puppet is used to perform movements. A direct link to a 3D program, like Maya, allows the animator to review the performance in real-time.

To conclude marker-less Motion capture in real-time is still in development for private use. Many approaches have been developed to provide best results with the given circumstances. The accuracy of the tracked movements is not comparable to high-end methods but in future there might exist more advanced algorithms to overcome such weaknesses.