

How I Animate: A Hand Gesture-Centric Technique

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1. INTRODUCTION

Creating animation is an intriguing activity that one can experience making an inanimate object animate. But the process can be very time consuming and tedious when it involves animating a character using the keyframe technique. The complexity of movement requires detailed observation imagining continuous real-time movement into fragmented keyframes that are used to construct movement in 3D computer animation. Although movement is the key element underpin every animation, however, animation remains blunt and movement merely a movement without imbuing the aesthetic of timing. A precise timing provides 'believability' that conveys meanings to every movement without it necessarily being a realistic representation. Previous works on similar keyframing and timing issues investigated a 'dragging-based technique' [Walther-Frank et al. 2012], using 'an artist's doll and video camera rig' [Gunawardane et al. 2007], and 'an "act-out" timing information using [...] a mouse or pen-tablet' [Terra and Metoyer 2004] and a 'spatial keyframing [...] for performance-driven animation' [Igarashi et al. 2005]. Others may take a different approach that uses motion capture to record real time movement but this replicates realistic movement and does not allow for stylized animation.

2. OUR APPROACH

In our presentation, we propose a work-in-progress seeking a novel approach to animation techniques based on hand gesture movement using motion-sensing controller, Leap Motion. We investigate the depiction of timing of movement through a motion-sensing device that detects hand/finger movements and gestures in midair. We transfer this hand movement to an animated 3D character. This technique is expected to create a full hand-body of embodied interaction, which provide direct manipulation and immediate response between

user's hand control and a 3D character. An inspiration for this technique is traditional marionette puppeteering where the timing of movement in the puppet is knowingly generated by the puppeteer. Through similar concept, our interface allows the timing of a 3D character's movement to be influenced by the user's hand/finger controls; while it concurrently automates the keyframes directly (see Figure 1). It consists of three basic components: a Leap Motion device, a *LeapStreamer*, and a 3D animation software; for this purpose we use Maya. Our technique aims to improve the essence of creating movement, that is timing, which the existing keyframing technique makes hard to achieve.

3. REFERENCES

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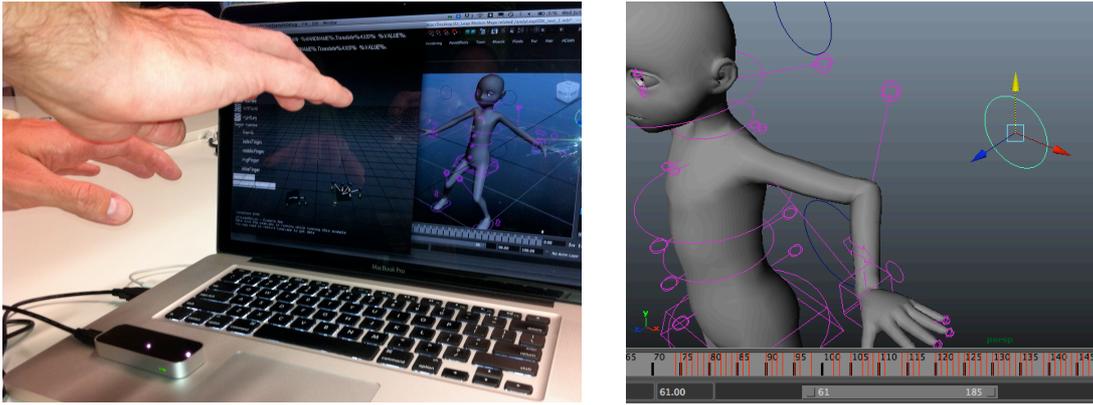


Figure 1: Hands manipulations take place while, keyframes are automated and timing is generated