

We have decided to use two camera's to create a 3D motion capture system. The two cameras will face the user at 90 degree angles from each other. Using either colored patches or illuminated bracelets, we will track the users joints in the XZ plane with one camera and in the YZ plane with the other. From here we can generate a list of coordinates that can then be used to reconstruct a skeletal model of the user. We will then use this model to generate a 3D model of the users movements on a computer screen. For the minimal design we hope to track a user's arms and torso. This will require tracking of four separate points. The generated 3D model will be a simple collection of cylinders to represent the user's arms and torso. In the minimal design, motion will be tracked and saved, and then played back. If we are able to quickly achieve the minimal design, we will improve upon it by tracking all of the user's body parts, for a total of eleven points (if we are clever, it might not be necessary to track 11 colors (an impossible task)). In addition we could improve the generated model to be a high quality model from a video game or movie. Another improvement would be to have the system work in real time instead of recording.