Existing Solutions and Our Ideas

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1 Problem Description

Suppose you wish to create a recording of yourself as you move around and do activities. Usually, you have a middle man that is between you and your camera so that the they can control the camera so that it is continuously focused on you. However, it is not always the case that this cameraman is available to help you film yourself.

2 Problem Solution

To eliminate the need for a cameraman, a camera is first placed on a custom mount. Then from reading the input stream of the camera, software we track your motion displacement and control the mount to follow your motions. The mount is capable of rotating along a horizontal plane and a vertical plane.

3 Existing Solution

3.1 SoloShot

Soloshot solves the problem of not having a cameraman by having a custom mount that tracks user motions. A camera is then placed on top of the mount to film. The key to Soloshots solution is that the user must wear a tracking tag as they do their performance. The custom mount contains a component - called the base - that tracks the tags position via a real-time location system. This base tracks the tag and rotates accordingly using internal rotators.

There are two main disadvantage to Soloshots solution. Firstly, the user is required to the wear a tag for the mount to follow. This would involve the user to attach onto themselves somehow or place it in their clothing. Using the track tags also raise an additional point of failure. If the tag failures to send signals to the mount then the solution no longer satisfies the problem statement. Secondly, the cost of the technology is very high with respect to normal camera expenses. With a mount that costs $500, the technology is more geared towards professionals rather than amateurs.

3.2   Swivl

Swivl is a video capturing platform built for mobile platforms such as Android and iOS. Swivls solution to eliminating the cameraman problem is to utilize mobile devices and placing them on their custom mount. For the mount to track a users motion, the user will hold onto a marker that the mount will communicate with bluetooth signals. The mount then tilts and rotates accordingly to how the marker is moved.

Similar to the solution provided by Soloshot, Swivl requires the need of a marker that communicates with the mount to track user motions. Another disadvantage to Swivl is that the marker must be within line-of-sight. If the marker goes behind an object than the mount will not be able to detect motion.

3.3   AIMe

AIMe aims your camera and keeps the subject framed. It uses an IR emitter that can be attached to any object that you want to track called EmIT. It pulses an IR signal differently than than what occurs naturally indoors or outdoors, so it's able to detect a unique pulsing pattern, lock on to it, and follow it, through tilting and swiveling the motors. AIMe is able to move up to 100 times per second and can be visible to over 100 feet away indoors and over 300 feet away outdoors. It's able to work with any small camera that has compatible mounting. Hardware wise, AIMe has double-sealed steel ball bearings that allow it to accomodate thousands of pounds of force, and is able to react to being dropped or jolted.

4 Our Solution