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Hand-Directed System for Identifying Activities

There is great interest in camera-based wearables for monitoring human activity. These devices can be used to monitor activity anywhere and at any time. Much of human activity involves the use of hands and often in conjunction with objects. Certain everyday activities, e.g., taking medication or grabbing keys, can be quite complex. These activities involve finer micro-activities, which can be performed in varying sequences. Also, distractions and disturbances can arise when performing these activities resulting in significant variations from individual to individual and even for an individual performing the activity from one time to the next.

Consider the task of taking one's medication: this may require the individual to open a pillbox and to bring one or more pills at a time to the mouth. In reality, the situation may be more complex: the pillbox may contain incorrect pills, the individual might drop a pill, the individual might interrupt the process to take food or drink. In the case of grabbing/taking keys, one would have to monitor that the individual has the keys in hand, in a pocket, or in a bag when the individual reaches for a door.

There is a need to track certain human activities for the benefit of the individual. For example, to ensure a user is taking their correct medication. In another example, to aid a user in keeping track of objects.

Researchers at Arizona State University have developed a wearable device and method for identifying and tracking a user's actions with said device. The device includes one or more cameras that collect video data which is interpreted by a controller. A user's actions can be tracked and the user can be notified immediately whether a particular task has been completed successfully or not.

Potential Applications:

- Wearable device for tracking a user's activities, e.g.,
 - for medication management
 - for tracking/locating smaller objects, such as keys
 - for tracking activities in industrial and medical environments
 - for quality assurance/quality compliance tracking

Benefits and Advantages:

- Wearable (e.g., as part of a smartwatch)
- Easy-to-use
- Wireless
 - Can work in conjunction with a smartphone or tablet device

