Team Name: sdmay24-27
Team Members:
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Report Period: Aug 28-Sept 10

Summary of Progress in this Period

The team met with our client/advisor for the first time to begin the project's initial planning. The project's scope was discussed to determine what type of resources we needed to achieve our goal. The method of relaying information to the user was decided to be a haptic feedback motor the size of a dime. Tentatively, an array of 4x4 motors will be placed either on the chest or the arm. Camera mounting discussions were started but need to be continued. It was also decided the starting prototype would focus on functionality rather than form factor. Potential equipment links have been documented, and other general project guidelines and milestones have been laid out. Research was the main focus and will continue for at least the next two weeks.

Pending Issues

Several potential usability concerns for the customers were identified. The list is shown below:
- Type of application (indoor vs. outdoor)
- Safety issues (overheating, dangerous vibration, etc.)
- Privacy issues (cameras outside, in the bathroom, etc.)
- Object recognition of objects requires mass AI training
- Differentiating vibration intensity, may be difficult to accurately assess.
- Vibration from a motor's effect on sensing other the other motors' vibrations.
- Latency is a concern, 30 fps is desirable. Depth data may be different than normal camera specs
- Camera or motor position changes between users may not be accounted for within the parameters

A final decision on the stereotypical camera must be made. A decision to delay the purchase was made, but more research has to be done to define the project's scope to make the proper purchasing decision. Furthermore, an issue was identified with the processing unit. The unit must be able to compute the necessary data and power the haptic feedback motors yet be reasonably sized for a user.

Plans for Upcoming Reporting Period

It has been decided that we will be ordering several haptic feedback motors. The order will be sent to our advisor to be approved. We will be doing some research into similar projects from established companies, such as Apple's upcoming Vision Pro. There are research groups that have published data on similar issues we have identified. We will split up into respective groups to research and address the issues we described above. The engineering team will also begin prototyping with breadboards.