Experiment Outine

List of Experiments To Be Held

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Experiment 1

Finding The Relationship Between Silhouette and Hand

Purpose:

To show that the silhouette can be used to find an appropriate range of what the hand should fall within a certain range

To show the silhouette holds some signifigance

To emulate primitive human vision: seeing the rough shape may be aid to understanding whether it is human or not and to humans' innate sense [Maybe cite some natural facial recognition(psych)]

(Mini)-Hypothesis:

If there exists a golden ratio as in the work of Da Vinci and Vitruvius, then a natural range of what is to be expected should be able to be used by the algorithm to help predict what is a hand and what is not.

Method:

As motion is initially detected, we can capture that and test with euclidean distance if the potential hands found are in proportion. As the user moves, the silhouette would have to be recaptured, or the calculation may be off.

Prediction:

If it works: This means that the process to find hands is fine tuned, but also it means that since we have two working points of reference, we can define a **scale** at which (theoretically) can be used to help search for anything else on that user's body.

Else: It may be because when detecting motion, we are getting a lot of instaneous noise that may cloud a silhouette and then tossing out the silhouette since it is not the focus of the environment currently.

Experiment 2

Gathering Data And Measuring Ratios Found

Purpose:

To give some validity to the premise of a golden ratio in humans in reality

(Mini)-Hypothesis:

If the golden ratio exists as documented, it should not diverge too far what is reported.

Method:

As the algorithm runs, it can record a running average (or the data itself) and that can be compared to the ratio given by sources on the idea of a golden ratio. Also it should performed on different subjects, as it will add diversity.

Prediction:

There will be a ratio either way; whether it lines up to Vitruvius or not. That ratio finding will build a mathematical model of what dimensions make up the user. If they are unique enough from the golden ratio and others, it could be used a identifier for the particular user. If it is does fall in line with the golden ratio, then it can show the validity to the golden ratio.