

## Abstract

There are various ways to make the interaction, interaction by using conversation or sign language that has been agreed before. One of the ways to interact were trying to apply the interaction with computer is using sign language especially hand. Formerly, Computer must recognize that the object captured is really a hand with spesific pose. Then computer must have ability to track the hand that intended to express the information the active finger. The feature used to recognize the hand object is hand geometry with chrominance character (skin color information).

This research about hand tracking based on geometry features, by using modified *Competitive Hand Valley Detection* (CHVD) algorithm and moment to get the reference point. To conduct hand pose recognition based on active finger that assisted with decriptor that contains the characteristics of the geometry that is formed between the fingers and palms include distance and angle.

From the test results shows that by merging these two parameters, in normal condition obtained an average accuracy of 88%, while in extreme conditions obtained an average accuracy of 38%. In terms of speed, the application can run at speeds 0.5966 fps or equivalent 1.6762 seconds to process one frame.

**Keywords:** *hand-tracking, hand geometry, CHVD*