**Algorithm for creating SVM classifier.**

1. Start

2. Initialize Training data and class labels descriptors.

3. Prepare train data for one finger.

3.1 Get directory path which has respective images.

3.2 FOR each image in the directory

3.2.1 Resize the image.

3.2.2 Convert the image to GRAY colour format,

3.2.3 Detect and extract AKAZE features from the subsequent image.

3.2.4 Append the above feature descriptor in training data descriptor.

3.2.5 Append the respective class label in the class labels descriptor.

END FOR

4. Prepare train data for two fingers.

4.1 Get directory path which has respective images.

4.2 FOR each image in the directory

4.2.1 Resize the image.

4.2.2 Convert the image to GRAY colour format,

4.2.3 Detect and extract AKAZE features from the subsequent image.

4.2.4 Append the above feature descriptor in training data descriptor.

4.2.5 Append the respective class label in the class labels descriptor.

END FOR

5. Configure the parameters for SVM classifier.

6. Use the training data and class labels descriptors to train SVM classifier.

7. Check if the model is trained successfully.

8. Save the trained model in XML file.

9. Stop.

**8.3.2 Algorithm for real time application.**

1. Start.

2. Trigger Android device’s inbuilt camera.

3. Capture the image via triggered camera.

4. Convert the captured image to a form required for image processing.

5. Perform image processing operations on the subsequent image.

5.1 Convert the image from RGB to YCbCr colour format.

5.2 Separate out the hand region using skin colour detection algorithm.

5.3 Apply median blur filter on subsequent image.

5.4 Perform dilation on the image.

5.5 Feed the image to SVM classifier for gesture recognition.

5.5.1 Perform image processing operations on the given input.

5.5.1.1 Resize the image

5.5.1.2 Convert the image to GRAY colour format.

5.5.2 Detect and extract AKAZE features from the subsequent image.

5.5.3 Load the trained SVM classifier.

5.5.4 Feed the extracted features to the classifier.

5.5.5 Return the predicted class label/recognized gesture.

6. Give the recognized gesture as an input to gesture interpretation algorithm.

6.1 IF gesture is one finger THEN

Perform Zoom In operation on the asset present in the view.

Play audio source that gives information about respective asset.

ELSE IF the gesture performed in two fingers THEN

Perform Rotate operation on the asset present in the view.

Play audio source that gives information about respective asset.

7. Repeat the steps starting from 3 per frame till the application is closed.

8. Stop.