Face detection

This application detects the facial region in a given image. The face detection algorithm first identifies the skin pixels based on the RGB values of the pixels [1]. If the values of each pixel satisfy some conditions, then the pixel is considered to be a skin pixel. The connected component analysis of these skin pixels is then performed. The facial region corresponds to the component with the largest area. The bounding box is drawn over that region on the original image.

The TGA face images of size equal to the dimension of LCD are placed in the *app_face_detection/image/* directory and their file names are included in *app_face_detection/src/app_conf.h*. Each image should contain a single face.

The demo displays the face detected images on the LCD one after another upon screen touch. The binary images showing the detected skin pixels also follow. The demo runs on an L16 sliceKIT and the hardware setup is shown in Fig 1. The source code is available in the *face_detection* branch of the GitHub repo *sc_image_processing*.

Fig 1: Hardware Setup

Reference

1. Jure Kovač and Peter Peer and Franc Solina, *Human skin color clustering for face detection*, EUROCON 2003.

http://eprints.fri.uni-lj.si/2113/1/Human_Skin_Colour_Clustering_for_Face_Detection.pdf