

Implementation Plan for S&S

Schedule

Step 4 due on 04.12.2017

Step 1 due on 11.12.2017

Step 2 due on 21.12.2017

Step 3 due on 05.01.2018

Step 5 due on 18.01.2018

Steps

1. Detect basic sketch

1. Extract

1. Detect the hoop in input_img (assume one known hoop).
 - One idea is to add markers on the hoop that indicate the centre of the hoop. Then you can apply a predefined mask (known size and shape) at the center and crop the fabric sketch. ([marker detector](#))

2. Crop the fabric inside the hoop. Store in cropped_img.

2. **Process:** Increase cropped_img exposure, contrast, and sharpness (fabric used is always white). Store in processed_img. ([image contrast and brightness](#))

3. **Filter1:** Filter out (remove) 'white' and 'black' colored things in processed_img. Store in filtered1_img. ([color filtering](#))

4. **Store:** Store filtered1_img such as it would appear inside the virtual hoop in DesignerPlus at the same location and scale of input_img.

2. Detect embroidery stickers

1. **Detect Corner:** After 1.4, detect the corners of 'blue' rects. Store coordinates of corners relative to filtered1_img in corner_array. ([Harris corner detector](#))

2. **Filter2:** Filter out (remove) 'blue' rects. Store in filtered2_img.

3. Superimpose:

1. Duplicate filtered2_img twice. Increase the duplicates threshold until they look like blank canvases.

2. You will be given 3 miniature images (alb,c). Duplicated each image as many times as length(corner_array). Place each image duplicates at coordinates in corner_array.

3. **Get the picture:** Mobile app that takes a picture and puts it in a cloud folder. A PC app that pulls this picture from the cloud folder and doesn't 1+2.

4. **Talk to Bernina:** The PC app sends filtered2_img to Bernina software, clicks the UI, stores as the result in a older.

5. Detect insulation

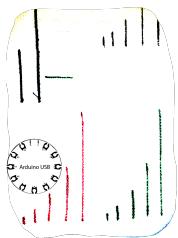
input_img



cropped_img



processed_img



filtered1_img

