Defect Detection in Fabric:

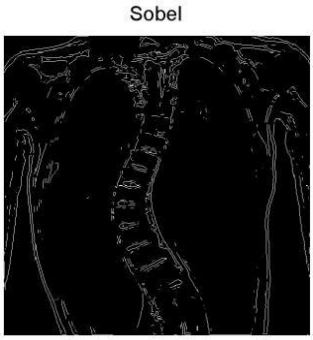
The defects occurring in the fabric is a result of flaw in manufacturing process as well as the fabric inspection process. So, fabric inspection process or we can say fabric defect detection is very important for the textile industry, so that the product received by the customer is defect free. In the recent year of technological advancement automatic fabric defect detection is developed and it has sidelined the traditional process which is performed by humans. Generally, the automatic defect detection process involves three steps: image acquisition, defect detection and post processing of fabric.

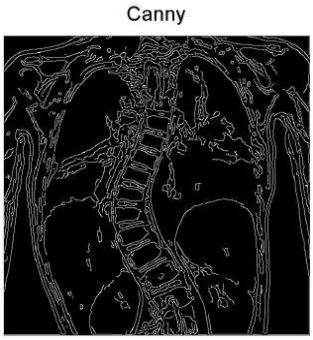
Working:

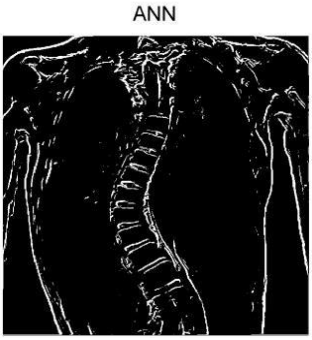
In our project we are viewing the cuts or the defects in fabric as a window of edge creation which needs to be detected by the camera it passes through. Our working model comprises of a conveyer belt type structure on which the fabric moves with a camera being at the center of it all to detect all kinds of fault occurring in the fabric. We are considering each frame of the image taken by the camera and converting it into grey scale for processing purposes. We then by the help of our microcontroller (Raspberry pi) process that image and pass it through canny filter to detect any edge present in the fabric. When no edges are detected, the motor continues to move as usual with the green LED still glowing while as soon as an edge is detected, our code asks the motor to stop and gives a red LED and a buzzer to let the people know of defects.

Edge Detection:

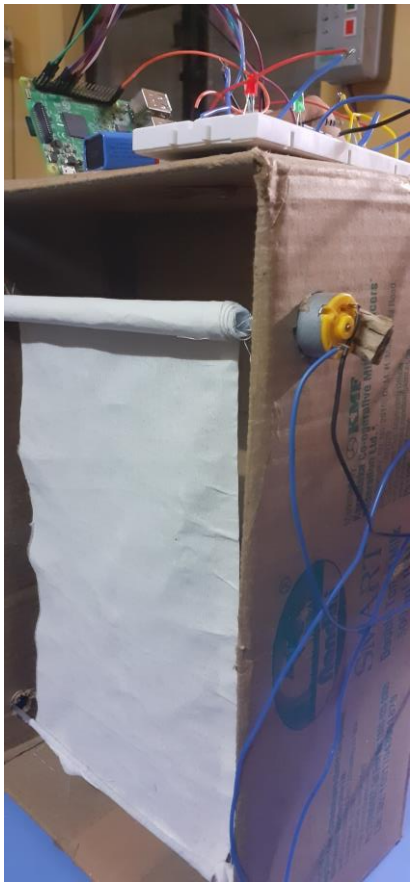
Output:







Working Model:



Video Link of our Model:

https://www.youtube.com/watch?v=JPnzcm21Uh8