

ECEN 5623 project proposal

“Stackbot”

Members:

Anitha Ganesha

Jovita Castelino

Sanjay Dmello

Zhiyuan Qi

The aim of the project is to pick up items from a conveyor belt and stack them according to their shape, similar to an assembly line stacking system.

Minimum objective: “Identifying objects of different shape moving on a conveyor belt”. The objects will be placed on the conveyor belt in succession. Using the camera the shape of the object is determined by performing image processing on the acquired image. The different shapes to be determined could be circular, triangular and rectangular.

Target objective: “Stacking the objects according to shape detected”. After identifying the shape of the object, the robotic arm moves to pick up the object from the conveyor belt. The robotic arm will have to move in such a way that it takes into account the speed at which the object approaches the arm. After picking up the object, it is placed in a location corresponding to a particular shape’s stack.

Goal objective: “Objects not correctly aligned on the conveyor belt should also be detected and stacked”. The shape of the objects will be determined regardless of the alignment of the object on the conveyor belt. They will then be stacked as per the target objective.

Individual Role:

“Stacking” Anitha

“ I will be working on speed detection and picking the object when it is travelling” Jovita

“coordinating the six degrees of freedom of the arm as well as building the conveyor belt, shape detection” ZHIYUAN

“shape detection algorithms” Sanjay