

S19-36

America accumulates more than 254 million tons of trash annually, but recycles only 34.5% of its total municipal waste. Although most are aware of the consequences of pollution and landfills, many individuals fail to recycle accurately due to lack of access or inconvenience. Our team proposes a solution to this issue with a self sorting trash can. This device will use computer vision and various sensors to categorize a disposed item and send it to the appropriate bin using a conveyor belt mechanism. We will finetune the Resnet-50 neural network architecture with thousands of images of waste to categorize its findings into: paper, plastic, metal, glass, and trash. We will use a Raspberry Pi 3 B+ in conjunction with an Arduino Pro Micro to control the conveyor belt system. With our project, we aim to streamline the process of recycling with efficiency and accuracy.