

Object Detection Using Computer Vision

Nadia Cannon

Dr. YeZhu

Cleveland State University

INTRODUCTION

Object Detection is used in an abundance of areas such as surveillance, modeling, or even video game design. In this project, methods of object detection were researched. These methods would later be applied to gesture creation. One of the most important tools for object detection is the OpenCV library. This is an open-source computer vision library with real-time functions and algorithms designed for real-time applications. The research for this project includes learning about the applications of OpenCV and how to integrate it into applications for object detection.

been explored. Haar Cascade Classifiers are good for detection of multiple of the same object but not useful for multi object detection. Researching on how to detect multiple different objects, and API was selected as the main method. This is accurate but leaves little room to change how training is done for better customization of the network.

RESULTS

‡ Figure 2 is an example of using an existing Haar Cascade Classifier for Stop Signs. Haar Cascade Classifiers can detect multiple of the same object within an image.

‡ A custom Haar Cascade Classifier was created for the detection of coffee mugs. The accuracy of the Classifier is shown in Figure 3 when this classifier is used to detect a single and multiple coffee mug object within an image.

have

Figure 4. Multiple Object Detection, Results from API

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