CSCI-B 649 Internet of Things Project Proposal

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March 21st, 2018

1 Abstract

Audio detection and recognition is quite popular amongst IoT devices which use microphones to identify the audio and use machine learning algorithms to classify the audio. Popular devices like the Google's Home Assistant, Apple's Siri, Amazon's Alexa, Microsoft's Cortana use advanced voice recognition to learn about their user and train their models to identify their user's voice commands. All these devices have some things in common, for example, they either push all the data to the cloud for processing, or they try and listen for specific keywords in order to start listening and then process the audio. Another thing is that they need to be connected to a power source constantly for operation.

2 Introduction

Our project is a highly simplified implementation to detect and classify audio signals for a specific range of frequencies to detect whether the audio is from a truck or not. In this project, we propose an idea of classifying audio as whether the audio signal is of a truck or not on a Particle Photon. We will be implementing basic classifiers for the detection and would adjust the training of the classification model to achieve good accuracy while having efficient processing of the data to preserve battery life of the Photon.