Roshan Nair

Fundamentals of Computer Programming

15-112

22 November 2016

Competitive Analysis

Speech recognition and synthesis is a common technology found on many platforms. Many companies or products use them as an AI assistant for certain tutorials or as a companion for a phone or tablet. However there are some companies that use this technology to help others.

Specifically the company “Acapela Group” uses technologies such as this to help people who have lost parts of their voice. They take recorded output and generate artificial voice based on characteristics of the recorded files. They do this by breaking up words into multiple, fundamental sounds. Then whenever they need to generate a word, they collectively add the required sounds for each part to form the whole word. This is similar to my project in such that I will also be analyzing single words and their characteristics. However rather than using that information to generate my own speech synthesis, I will instead compare it to a voice sample to determine whether the overall pronunciation is correct. I am using techniques demonstrated by the company “Acapela Group” but applying it to solve a different problem.

Additionally there is an iTunes app called AccentClear that helps users who have a hard time articulating certain words or adjusting their accents. This app addresses the same problem I intend to solve, however it does it through the use of one-way tutorials and focuses on physical mouth gestures needed to pronounce each word. Instead of focusing on the verbal movements, I intend to instead plan to use a 2 way tutorial where it actually takes your voice sample and compares it against the artificial one. Then it can highlight the sections of the word that are significantly different, thus helping the user fix their pronunciation.

My term project utilizes the techniques of other products and applies them to solve a different problem. While the overarching techniques are the same, I will still have to implement the algorithms myself.