Assignment 3 Speech Recognition & Processing

Introduction

In this assessment I created a speech recognition application. The application is aimed to be a translation companion that a person travelling to a country that speaks a different language could use. I limited the language capability to English too Korean translations, but the app could easily be expanded to cover more languages. I chose Korean as the target language as I have personal interest in Korea and I can translate simple sentences myself, allowing myself to check validity of the translations. The use case of this app would be to help an English speaker in Korea order food at a restaurant for example but there are many practical uses. I named the app K-Lingo.

Process

There are 4 main steps of the process that I took to create the application. Getting English user's sentence to translate. Converting the audio to text. Converting the text to Korean. Saying the Korean to the Korean/user. As well as that working this all into a GUI will need to be done.

First, I set up the microphone to get the user's input. I bound the function to a button so when the user presses the button it starts listening to the microphone. Additionally, I set the microphone to adjust for ambient noise to get a better result. The microphone input was saved and converted into text straight away. Now that I had the english text to translate I appended the text into the output window of the GUI to show the user what was captured. I translated the text from english to korean using deep translate from GoogleTranslate. This was great as it was free and didnt require any API signups. I simply inputted the sentence and set the target language to korean. All while catching any errors if they occur.gtts was used to then speak the translated korean to the user so they could listen to the translate instead of reading it giving the option of both.
I was going topreproccess the data but there was no need to do so as these made the translations much worse because it is improtant to include all the words and not remove any stop words or punctuation as this could change the meaning of the sentence drastically.

Conclusion

In conclusion, I created a usful application that was effective at translating English to korean. It made use of a well-designed GUI to make using the app easier. The application could have been extended to include Korean to English which would have been a good addition.