

OUTLINE OF APPROACH

The points enumerated below represent a high-level overview of all the steps to be taken in the conduction of this research.

1) Data Collection

- **What data is going to be collected:** Data consisting of voice recordings, in the Twi language, would be collected from the research participants. In the initial stages of the research, the research participants would consist of students from Ashesi University.
- **How the data is going to be collected:** The data is going to be collected from the research participants by asking them to record their voices into a voice recorder.
- **What the data is going to be used for:** The data collected is going to be used to create a Speech Recognition System. A Speech Recognition System is a computer system that enables the recognition and translation of spoken language into text.

2) Pre-processing the data collected

- The data would first be organized such that each voice recording is associated to its right speaker.
- Then, the transcriptions of each of the voice recordings would be written and associated to its corresponding recording.
- The features of each voice recording would then be extracted from the data and used in the development of the Speech Recognition System.

3) Design of the Speech Recognition System

- The various methods that would be used for the development of the Speech Recognition System are identified and explored.

4) Implementation of the Speech Recognition System

The implementation of the Speech Recognition System would be in three parts.

They are:

- Limited Domain Speech recognition: In this aspect of the implementation, the Twi speech collected would be transcribed into Twi text.
- Machine Translation: In this aspect of the implementation, the Twi text obtained from the first step of the implementation, would be translated into English Text.
- Natural Language Understanding: In this last aspect of the implementation, the computer system would be trained to perform an action based on the English Text that is generated from the second step of the implementation process.

5) Evaluation of the Speech Recognition System

- At this stage of the research, the accuracy of the already built Speech Recognition System would be assessed and any further improvements that need to be made in the development of the system would be made.