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Capstone Deliverable 4

7th November 2018

Topic – **Accessing the impact of African Accent on English speaking speech recognition systems.**

Research Question – **How does the African Accent affect English speaking speech recognition systems?**

Outline of Methodology/Approach

For the experiment(s) which would be made performed for this research, below is a slightly detailed approach as to how the tests would occur.

- **Participants Selection and Grouping** – For this tasks, various activities would be performed to get the right participants for the functions. A stratified method of selection would be used for the experiment. The following tasks below would be conducted under the grouping of the participants.

1. Identifying the nationals of the participants that would be needed for the experiment.
2. Determining the age grade of intended participants. The participants should be between the ages of 17-21.
3. Identifying the educational status of expected participants. Participants should be freshmen college students.
4. Requesting and Signing of consent forms from the intended participants.
5. Stratified grouping begins. This grouping involves, grouping the participants according to their nationalities.
6. Another way of stratification consists in gathering the participants based on their sex to have gender balance.
7. Random selection of participants from the countries already selected.
8. The list of participants would be formed.

- **Accumulation of Data** – This task involves the following activities which would enable the data collection as well as data gathering.

1. The first step here is to identify the sentences or the group of words which the participants would be saying.
2. The next step is to record the participants as they individually say the phrases which were selected and identified in task 1.

3. The final step in this task is to save the recorded files according to each participants name, gender, and country of origin.

- **Identification of Speech recognition systems** – This task involves identifying the speech recognition systems that would be used to experiment for this research.

1. The first step is to check for possible open source speech recognition systems.

2. For the second step, some speech recognition systems such as the IBM speech recognition system, Microsoft's Cortana, Google's Hello Google and CMU.

3. The third step based on the first step involves adding more open source speech recognition systems if need be to step 2.

- **First Testing and Observation session** – During this task, the steps were taken here involve what activities would occur during this session.

1. The first step in this task is to play the recordings to the various speech recognition systems.

2. The next step involves observing the outcomes of each recording to each speech recognition system.

3. The next step here consists in recording the results after the observation of each recording.

- **The configuration of speech recognition systems** – This task comes right after the first testing and observation session. In this task, based on the results from the first sessions, the open source speech recognition systems would be configured to understand and interpret the recordings adequately.

- **Final Testing and Observation session** – This task involves once again testing the recordings with the configured speech recognition systems to fulfill the purpose of the research.

- **Research Findings and Conclusion** – For this task, it involves recording the results of the experiment as well as concluding and seeing to what extent was the purpose of the research fulfilled. This task would seek to answer how the African accent affects the impact of English speech recognition systems.