BIRZEIT UNIVERSITY

Spoken Language Processing- Spring 2024

Main Course Project

Submission Deadline: Saturday 8/6/2024

Project Overview:

As you know, this course requires a comprehensive term project. Since most of these projects require an intensive workload, you have to work on this project in groups of **three** (maximum three!) students. It should be clear each partner works on which part on the project discussion, and it should be added into the project report.

Project report

Each group has to prepare and submit a short report (2-4 double-column pages) describing your project, your methodology (techniques you used), and the experiments and results you obtained. Project report should be in the IEEE paper format (double-column pages) (including appendices, figures, references, and everything else you choose to submit). A template of IEEE paper can be downloaded from the course page at the ITC.

The following is a suggested structure for the final report:

1. Title, Author(s)

2. Abstract: It should not be more than 200 words

3. Introduction: this section introduces your problem, and the overall plan for approaching your problem

4. Background/Related Work: This section discusses relevant literature for your project

5. Methodology (system description): This section details the framework of your project. Be specific, which means you might want to include equations, figures, plots, etc

6. Experiments and Results: This section begins with what kind of experiments you're doing, what kind of dataset(s) you're using, and what is the way you measure or evaluate your results. It then shows in details the results of your experiments. By details, we mean both quantitative evaluations (show numbers, figures, tables, etc) as well as qualitative results (show images, example results, etc).

7. Conclusion and future work: Summarize main findings and main results (conclusion) you have obtained through this project? Suggest future ideas for improving the system performance.

8. Partners participation tasks: in this section you have to clarify which task/part each partner is responsible for.

9. References: List all references cited in your report in a formal way. This is absolutely necessary.

10. Appendix: append your implementation code you used for your experiments and results in this section.

Project description:

In this project, you need to develop and evaluate a simple acoustic Palestinian regional accent recognition system. As you know, Palestinian accents have many different sub-accents such as Jerusalem, Nablus, Hebron, and Ramallah. In this project, we need to develop a system that from a short speech segment can recognize the accent of speaker out of these four accents mentioned above (i.e. 4 classes). You need to make your system be based on acoustic features extracted from speech for accent recognition.

Dataset:

Download the following speech dataset (.wav files) for the four selected regions (accents) from the following shared links:

Training data:

https://drive.google.com/drive/folders/1UUk2kKcVm_nI_-5qmkZIGG3GVtI7jbu6?usp=sharing -

Testing data:

 https://drive.google.com/drive/folders/1FEiW73Sl-wONh9dQWEsiTRWfTGyufV3D?usp=sharing

Use training data for training and testing data for system performance evaluation. You can use percentage accuracy as a system performance measure.

System development:

Use Matlab/Python for developing your proposed systems.