**CMPE468 / CS568 Project Specification Report**

***Pitch Detection and Analysis of Audio Signals***

**Description of the Project:**

As a group we decided to come up with a pitch detector since pitch estimation is one of the significant challenges in speech processing. Pitch detectors can be used for analyzing and understanding the acoustic properties of sounds for different applications like music, speech recognition and audio signal processing. For creating effective speech recognition and synthesis systems, accurate methods of pitch detection are important to implement and use. Our project plan includes converting audio files into digital signals, process the data and estimate the pitch frequency.

**Software and Libraries:**

We are planning to use MATLAB as our software program in this project since it is commonly used for numerical computing, data analysis, visualization, application development, and is a popular tool for audio processing. We are aiming to use the tools, libraries, and build-in functions that MATLAB provides for pitch detection, such as Voicebox, YIN Pitch Estimator, MIR Toolbox, etc. These are the 3 libraries we are targeting for our project at the moment. We will be also using basic signal processing concepts. As our research continues, we may add additional libraries and tools in our project.