Abstract

In this project we worked with an acoustic and pronunciation model adaptation method for context-independent (CI) and context-dependent (CD) pronunciation variability to improve the performance of a non-native automatic speech recognition (ASR) system. The proposed adaptation method is performed in three steps. First, we perform phone recognition to obtain an n-best list of phoneme sequences and derive pronunciation variant rules by using a decision tree. Second, the pronunciation variant rules are decomposed into CD pronunciation variation. That is, some pronunciation variant rules that are dedicated to the specific phoneme sequences is classified into CD pronunciation variation. It is assumed here that CD pronunciation variabilities are invoked by a different pronunciation space from the mother tongue of a non-native speaker and the sandhi rules effects in a context, respectively. Third, the pronunciation model adaptation is completed by constructing a multiple pronunciation dictionary using the CD pronunciation variability. It is shown from the continuous Telugu-English ASR experiments. ASR system that is trained by native speech i.e., for telugu language.