Speech Recognition Application for Pronunciation Training

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Overview

- Background
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Background

- Computer-Assisted Language Learning for improving the oral skills of low-proficiency learners
- Struggle of being understood
- Lack practice because pronunciation is not a focus in classrooms
Statement of Problem

- Large number of immigrants in the U.S. who speak English as a second language
- Teachers lack training in pronunciation
Research Question

• How can automatic speech recognition help to improve the pronunciation of non-native English speakers?
Automatic Speech Recognition: Dragon
Methods

- Record Sentences: 20
- Read Sentences: 15
- Record Sentences: 20
Methods

- Native speakers trained the SR, one female and one male
- Participants were instructed to read similarly to the native speaker model
- Participants read each sentence up to five times, each time after listening to the native speaker model
Analysis

- Categories of pronunciation features:
  - Additions
  - Omissions
  - Substitutions
- These categories were a result of the SR
Examples: Addition

“All living things…”
“All living the things…”
Examples: Omission

“All *living* things…”

“All _______ things…”
Examples: Substitution

“All living things…”
“All leaving things…”
Results

- A t-test for related samples showed a significant improvement from Time 1 to Time 5 (p=0.001)

![Figure 2. Differences in Group Scores from Time 1 to Time 5]
Results

- SR helped improve the pronunciation of speech for non-native English speakers
- Findings show that group scores decreased in errors
Future Research

• Long term effects of SR on pronunciation
• Implementing SR technology to everyday situations
Questions