MAS.632 Conversational Computer Systems
Fall 2008

Problem Set 7

Applications of speech recognition

Below I propose some applictions of recognition. Each uses a different type of recognizer. None is a brilliant idea, they each have features and flaws. For each application, discuss the suitability of speech recognition. Will it work? Under what circumstances? Does it benefit anyone? How? If you think it is a stupid idea, say so, but still answer these questions. Hint: there are advantages to speech recognition for each.

For each application, you may assume you have limited speech output, i.e., you can play back a small number of pre-recorded messages which will not be changeable after installation. You could also store a limited amount of speech digitized from your users.

Expected length: two or three paragraphs for each.

Application 1: Elevator control

   Technology: Speaker independent recognizer, will recognize the digits 0 through 9, plus 5 words of your choice.

   Scenario: Walk into the elevator, speak the destination floor, elevator takes you there. (e.g., elevator control on the Enterprise)

Application 2: Voice dialing

   Technology: Speaker dependent recognizer, train by speaking a word once, 30 word vocabulary. You can also assume the phone has a one line LCD display if this is useful for prompts, number display,etc.

   Scenario: (on Mothers' Day) Pick up phone handset. Say "mother." Phone dials the digits for your mother's number (at which point you hear "We're sorry, all circuits are busy..." by your favorite long distance carrier).

Application 3: Voice control of car stereo

   Technology: Speaker dependent, limited vocabulary.

   Scenario: While driving down the expressway, control the volume, change stations, skip tracks on your car CD player.

Application 4: Voice controlled voice mail

   Technology: Speaker independent grammar constrained recongnizer

Scenario: While listening to your voice mail you can say "next message", "repeat", "previous", "reply." What else might you want to say?

Application 5: Dictation of email

Technology: Speaker adaptive large vocabulary dictation recognizer.
Note: you may also assume you have text-to-speech for output.

Scenario: Phone in, choose a name from your address book, and dictate an email. Please describe your user interface of choice, with a sample dialog of user inputting a short message.