

# Making a Speech recognition database: Human Machine Interface

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## Abstract

## 1 Introduction

For verifying and training speech recognition algorithms, we need a test set of spoken sentences.

Important deliverables for us:

- WAV-files
- Transcriptions

## 2 Method

TODO - How recorded and stuff

The final level for these challenges would be to recognise these sentences when they have been injected with several kinds of noise. This noise would consist of either White noise, Random city sounds. the noise of a passing Aeroplane

## 3 Theory

### 3.1 Homonyms

Homonyms are considered easy when both words are different kind of words grammatically, where one is a noun and the other a verb. Here grammar rules can be applied to find out which word was meant. An example of this can be found in Addendum A. Homonyms can be more difficult to detect when the words are grammatically similar. This is because the search space is not limited by grammar rules.

### **3.2 Short story**

A Children's tale should be relatively easy to distinguish. This is because they use relatively simple language. They are not likely to contain grammatical exceptions.

### **3.3 Tongue twisters**

A long time favorite, Tongue twisters often contain words that flow into each other. Word boundaries might not be clear which might confuse a speech recognition algorithm.

### **3.4 Accents**

Considering speech recognition algorithms are trained by native speakers, therefore it might be difficult to distinguish words spoken by non-native speakers. We will provide a dataset containing speech of students from different nationalities. These nationalities include, but are not limited to:

- Dutch
- Norse
- Swedish
- American (simplified) English

## **4 Discussion**

## A : Homonyms

### A.1 Easy

Just the three of you are going to be holding the [fort] tonight. He [fought] many battles with the early Labor party in Lancaster and discrimination against socialist employees was alleged.

She is still [weak] after her illness. He comes to see us once a [week].

The police soon arrived at the [scene] of the crime. - easy, here scene is noun  
He crouched down so he couldn't be seen.

Maybe we'll [meet] again some time. - easy, here meet is a verb I gave up eating [meat] a few months ago.

### A.2 Hard

These homonyms are considered hard because both words are the same kind of word grammatically. They are all nouns.

She's such a [dear] friend. The [deer] ate all the lettuce in the garden.

He found a mountain of [mail] waiting for him. - hard, here mail is a noun  
Many women earn less than their [male] colleagues.

## B Short story

This story is about a kid everyone thought was so terrific and so cool. That kid was me.

I knew how to draw great pictures. I even brushed my teeth, most of the time. And I had a few friends to play with. My parents left me alone a lot. They thought I was a cool kid. But that was only on the outside. They didn't really know me. Nobody knew what I was really like on the inside, except my grandma. She wanted to know how I felt. "What's the matter" she asked. And I told her everything, like how scared I was without a night-light or how awful i felt when I dropped the ball. I liked talking to grandma. She was a good listener.

## C Technical book

The important difference between the pend operation and simply polling the mailbox location is that the pending task is suspended while waiting for data to appear. Thus no CPU time is wasted for polling the mailbox.

The highest priority task relinquishes the CPU whenever it seeks to lock the semaphore guarding a critical section that is already locked by some other task.

When a lower-priority task blocks a higher priority one, a priority inversion is said to occur. Consider the following example, where priority inversion takes place.

## **D History book**

Some looked on jealously, like Caffaro, the most famous Genoese historian of the Middle ages.

Presenting himself as submissive inferior the Roman ruler hailed the shah as supreme emperor. Khushraw listened carefully to what the envoys had to say, then he had them executed.

In the short term, these measures meant little. After securing Palestine, the persians turned to the Nile delta, taking Alexandria in 619 AD.

## **E Tongue twisters**

### **E.1 Easy**

Can you can a can as a canner can can a can? Frivolously fanciful Fannie fried fresh fish furiously

### **E.2 Medium**

A pessimistic pest exists amidst us. Give papa a cup of proper coffee in a copper coffee cup.

### **E.3 Hard**

She sells seashells by the seashore. Which witch switched the Swiss wrist-watches?