ETH
Eidgenössische Technische Hochschule Zürich
Swiss Federal Institute of Technology Zurich

TIK
Technische Informatik und Kommunikationsnetze
Computer Engineering and Networks

Prof. L. Thiele

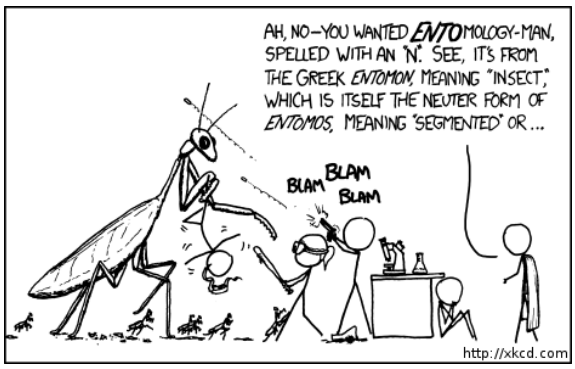
Semester / Bachelor Thesis:

# Deduction of Pronunciation for Unknown Words

**Motivation and Informal Description:** Finding the right pronunciation of a word is not always easy because the spelling is often misleading, especially when the words have a foreign origin. In speech processing this problem is circumvented by using a lexicon that lists the correct pronunciation for each word. When processing large text, however, there are always a number of words not in the lexicon.

So far, we have always deducted the most likely pronunciation from the spelling of these unknown words. While this is a helpful fallback, much more reliable pronunciations can be estimated from the speech corpora itself where the word was actually spoken.

The goal of this thesis is to automatically extract the most likely pronunciation of unknown words from large speech corpora. For this, the different utterances of the same word need to be extracted from the corpus and an algorithm developed that finds the sequence of phonemes found that matches best all utterances. A starting point of this algorithm is the N-dimensional Viterbi algorithm, it needs to adapted for the pronunciation task and, if necessary, extended with a simple language model.




**Requirements:** Some background in speech processing, Java programming skills.

**Interested? Please have a look at http://www.tec.ethz.ch/speech.html and/or contact us for more details.**

## Contacts

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