

# Digital Speech Processing Homework 1 Report

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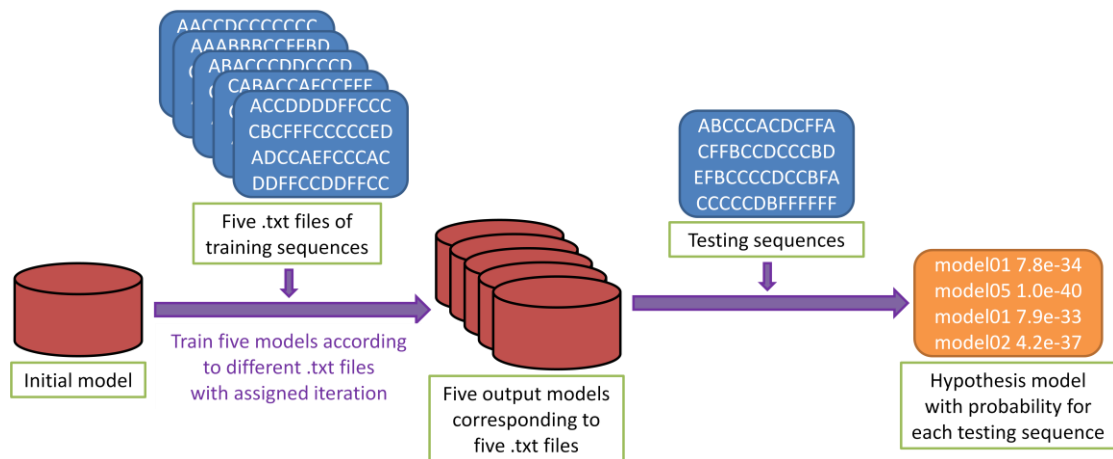
## 1. Overview

(1) Training step:

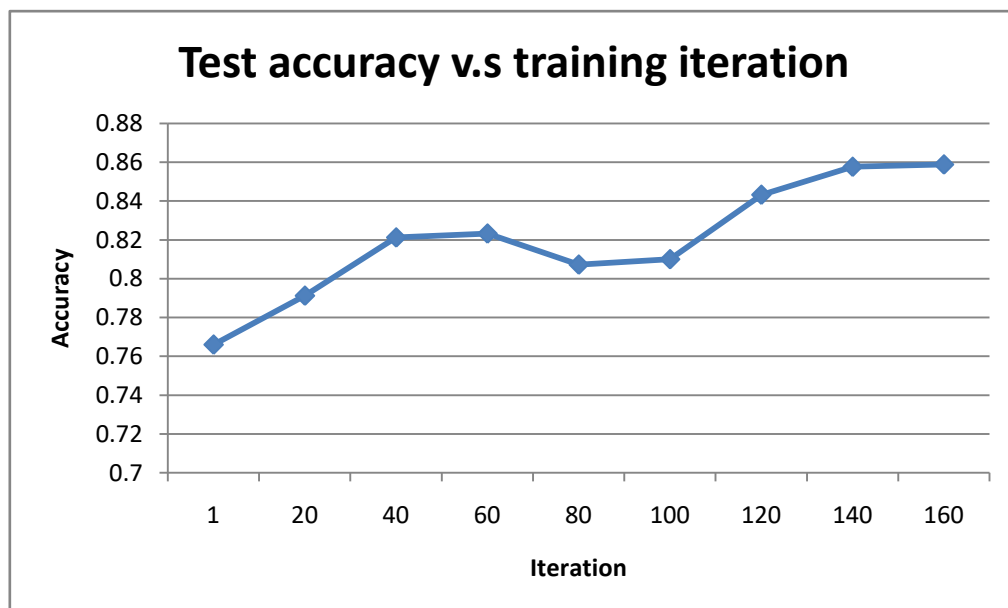
Given observation sequences  $O$  and an initial model  $\lambda(a, b, \pi)$ , we use Baum-Welch(EM) algorithm to adjust model's parameters in order to maximize  $P(O|\lambda)$ .

(2) Testing step:

Given an observation sequence  $O$  and different models, we use Viterbi algorithm to maximize each model's  $P(O|\lambda, q)$ , and then give out the model which is most likely matching the sequence with the probability.



## 2. Test Accuracy over Number of Training Iterations



Theoretically, models should be more accurate after more iteration. However, the graph shows that there is a pitfall between iter 80 and 100.