

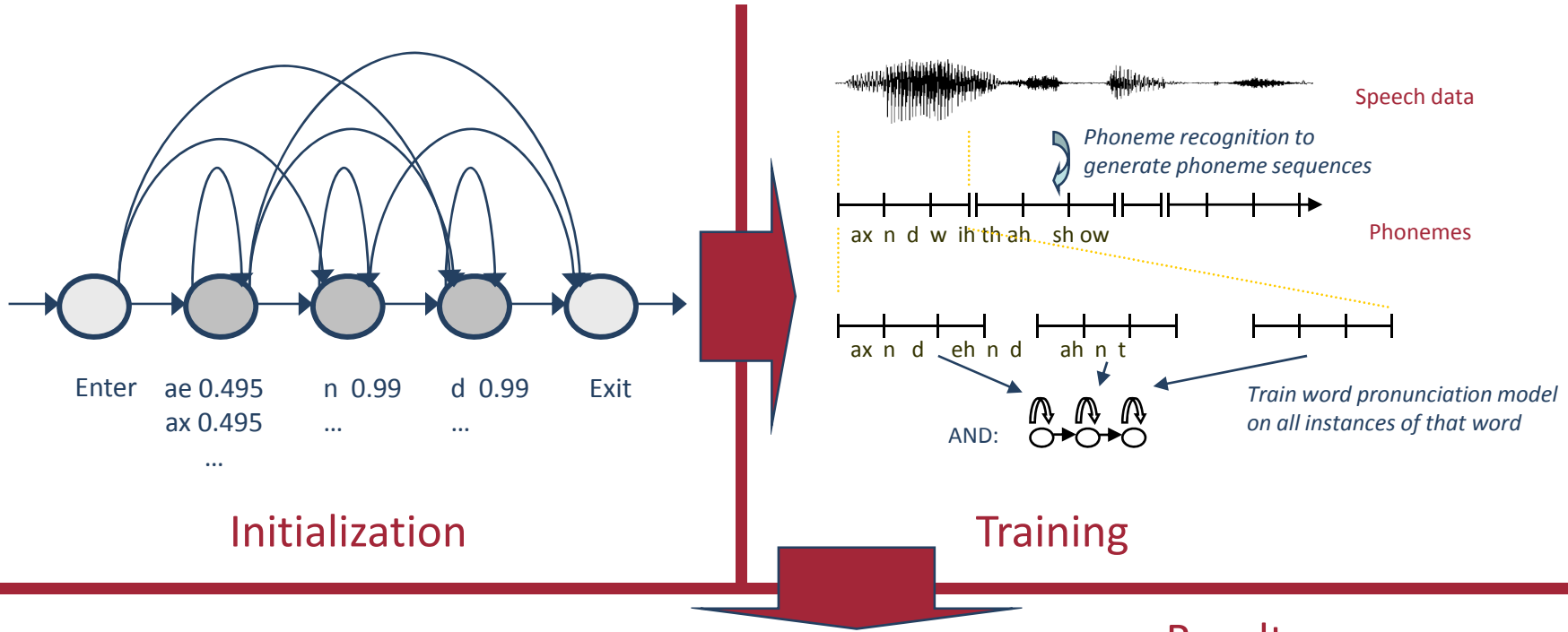
Non-Native Speech Recognition

- Non-native speech: many pronunciation variations, automatic speech recognition difficult
- Relevant in many applications of speech recognition:
 - Automatic tourist information system
 - Car navigation with user going abroad
 - Speech recognition in the media domain
- Necessary to improve automatic speech recognition of non-natives
- Target:
 - Model those variations automatically and statistically
 - Cover all pronunciation variations
- Approach: Train discrete Hidden Markov Models (HMM) for each word as pronunciation model

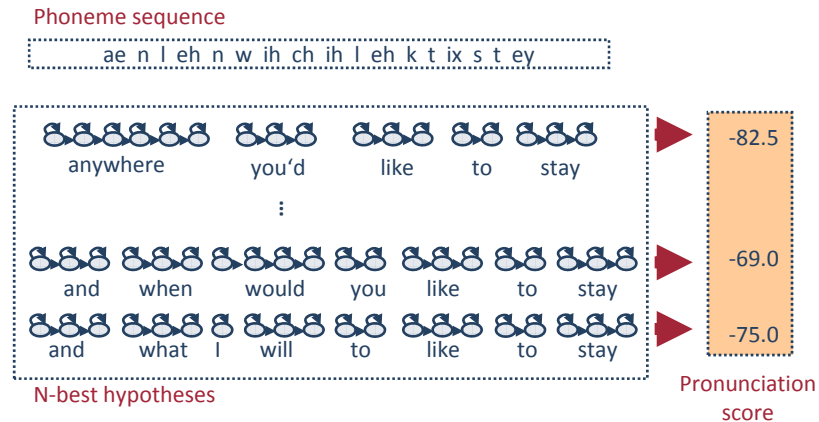
Research Questions / Challenges

- Statistical lexicon
 - HMMs to represent pronunciations (not explicitly representing the confusions)
 - One discrete HMM model for each word
 - Initialization on baseline lexicon
 - Training on phoneme sequences generated by phoneme recognition

Statistical Lexicon: Initialization, Training and Application



Application of Models



Results

