

# Spoken Name Recognition

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## Research Goal

- Improve spoken name recognition accuracy
  - Large pronunciation variation in names based on name and speaker origin
- Decrease perplexity of spoken name recognition
  - Number of names can be very large, exceeding 200K for some tasks

## Role in IMSC

- Name recognition is a critical part of most man-machine dialog systems
  - Examples include Airline reservations, directory assistance etc
- Low perplexity spoken name recognition is required for many services in PDA's, cell phones and other hand held devices

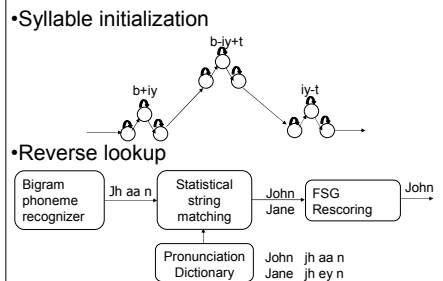
## Research Approach

- Improve recognition accuracy by using syllable level models
  - Pronunciation variations incorporated by acoustic modeling
  - Low deletion and insertion rate
- Reverse lookup based name retrieval reduces complexity substantially

## Accomplishments

- 30-40% accuracy improvement through syllable based modeling.
- Perplexity reduction by a factor of 5-7 using reverse lookup
- Publications
  - Hierarchical speech recognition using syllable and word-level acoustic units with application to spoken name recognition, *Speech Communication*, 2003
  - Split lexicon based hierarchical recognition of speech using syllable and word-level acoustic units, *Proc. ICASSP (Hong Kong)*, April 2003

## Uniqueness & Related Work



## 5-Year Plan

- Reverse lookup based name recognition using syllables: Algorithms and evaluation
- Utterance level keyword spotting/named entity recognition. Automatic pronunciation generation
- Implementation and demonstration in human-machine interaction systems

