GENERALIZED DRIVEN DECODING FOR SPEECH RECOGNITION SYSTEM COMBINATION

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**The Driven Decoding Algorithm**

**Anatomy of the Speeral decoder**
- Large vocabulary continuous speech recognition system
- HMM-based acoustic modeling
- Trigram language models
- Search: derived from a *A* search algorithm operating on a lattice of phonemes
- Exploration is supervised by the function $F(h_m)$ evaluating the probability of $h_m$ crossing the node $m$:
  \[
  F(h_m) = g(h_m) + p(h_m)
  \]

**DDA step 1: on-demand synchronization**
- A* search is synchronized to the transcript
- Linguistic probabilities are dynamically rescored
- Resoring is based on posterior

**DDA step 2: transcript to hypothesis matching score**
- Linguistic probabilities are modified using the following rescoring rule:
  \[
  L_m(w_m, w_{m-1}) = P_m(w_m, w_{m-1})^{-1/\gamma} \cdot \hat{S}(w_m)^{\gamma}
  \]
  where $P_m(w_m, w_{m-1})$ is the initial probability associated to $(w_m, w_{m-1})$.
  - $\gamma$ is the analysis window size.

**Multi system combination**

**Baseline results**

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**Generalized Driven Decoding for Speech Recognition System Combination**

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