Milestone 2
Apr 11th, 2017

Intelligent Conversational Bot

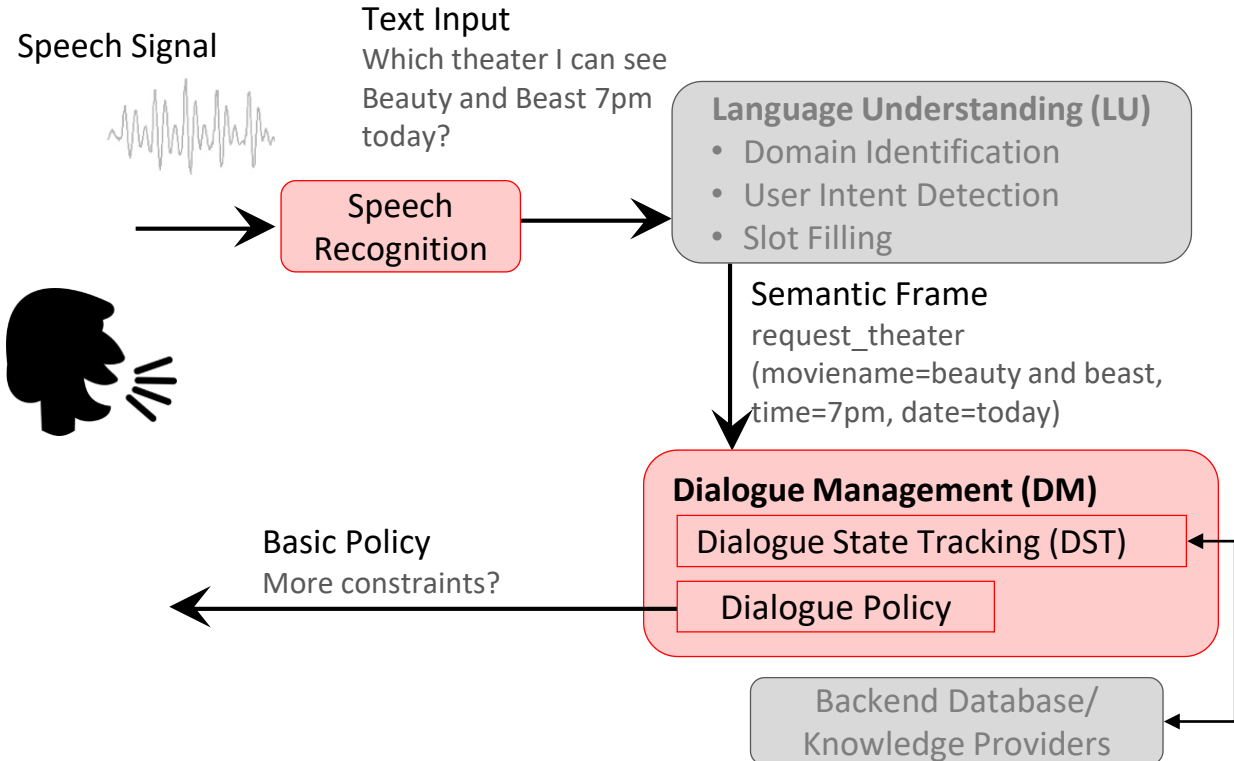YUN-NUNG (VIVIAN) CHEN

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Milestone 2 –Multi-Turn Interaction

Speech Signal

Text Input
Which theater I can see
Beauty and Beast 7pm
today?

Language Understanding (LU)
- Domain Identification
- User Intent Detection
- Slot Filling

Speech
Recognition

Semantic Frame
request_theater
(moviename=beauty and beast,
time=7pm, date=today)

Dialogue Management (DM)

Dialogue State Tracking (DST)

Dialogue Policy

Basic Policy
More constraints?

Backend Database/
Knowledge Providers

Milestone 2 – User Simulation
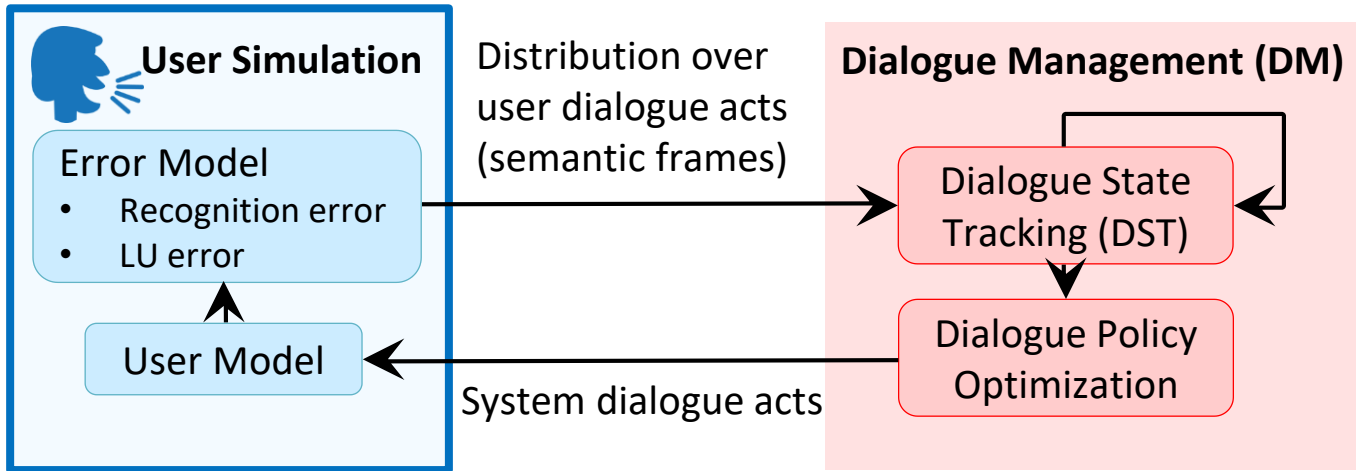
Milestone 2 – User Simulation

1) Define the goal list
2) Error model construction
   - Interact in frame-level
3) Template-based NLG
   - Interact in language-level
4) Reward model construction
   - Success/Fail
   - #turn
   - Reward

Milestone 2 – Basic DM

5) Dialogue state tracker (DST)
   - Rule-based combine the received semantic frames for tracking
6) Dialogue policy
   - Ask whether users want to specify additional slots
     - "any constraint?"
     - Randomly sample one from the unspecified slots
   - Request specific slots
     - Select a slot that can reduce the entropy most
     - Other policies
7) Dialogue ending
   - Inform the DB results when the dialogue ends

Milestone 2 Requirements

- ☐ Report (10%)
  - ◘ User Simulation
    - ■ Describe how you implement the simulator
    - ■ Bonus: extension about flexible slots, prioritized slots, etc.
  - ◘ Dialogue State Tracking
    - ■ Describe how you implement the DST (e.g. rule-based combination, CNN)
  - ◘ Dialogue Policy
    - ■ Describe the dialogue policy in your system
  - ◘ Performance
    - ■ Show some dialogues between the simulator and the system and report the performance
      - ■ Success rate, #turn, reward
- ☐ Demonstration (5%)
  - ◘ Run your code to TAs
  - ◘ TAs will randomly pick 5 interactive dialogues and see the results