NLP for the Enterprise
One year later
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The Past...
Paradigm Shift:
The machine reaches out to us.
Useful AI Cycle

- Users
- Speech Recognition
- Language Understanding
- Dialogue
- Insights
- App-specific computation
Data-constrained NLU – Sequence Tagging

List some classic gangster movies...

I love your question about movies ... :-)  
I will make an API call with this detected information.

genre: gangster

what was the movie that featured that song over the rainbow
find me the movie with the song over the rainbow
what movie was the song somewhere out there featured in
what movie features the song hakuna matata
sow me a movie from the 1930s with the song somewhere over the rainbow
what movie uses the song tubthumping

• Submodularity–inspired data selection for goal–oriented chatbot training based on sentence embeddings
Data-constrained NLU – Sequence Tagging

- Submodularity–inspired data selection for goal–oriented chatbot training based on sentence embeddings
Data-constrained NLU – Key Phrases

- **EmbedRank**: Unsupervised Keyphrase Extraction using Sentence Embeddings
Data-constrained NLU – Key Phrases

• **EmbedRank**: Unsupervised Keyphrase Extraction using Sentence Embeddings
Data-constrained NLU – Key Phrases

• EmbedRank: Unsupervised Keyphrase Extraction using Sentence Embeddings
Data-constrained NLU – Opinion Targets

• Unsupervised Aspect Term Extraction with B-LSTM & CRF using Automatically Labelled Datasets
• Dataset Construction via Attention for Aspect Term Extraction with Distant Supervision
Data-constrained Dialogue Managers

Movie Booking Domain

- Source Domain
- Baseline paper
- Slots:
  - city
  - date
  - number of people
  - movie name
  - start time
  - theater
- User Goals
- Searchable Knowledge Base (KB)

```
inform_slots: {movie_name: “avengers”, number_of_people: “3”, date: “tomorrow”}, request_slots: {city, theater, start_time}
```

Restaurant Booking Domain

- Target Domain
- Derived from DSTC 2
- Slots:
  - city
  - date
  - number of people
  - food
  - price range
  - address
- User Goals
- Searchable Knowledge Base (KB)

```
```

- Goal-Oriented Chatbot Dialog Management Bootstrapping with Transfer Learning
Transfering dialogue policies

- **Goal-Oriented Chatbot Dialog Management Bootstrapping with Transfer Learning**
Speech Recognition

Language Understanding

Dialogue

Insights

Users

App-specific computation
Auto ML: Use Github to for a better search space

*GitGraph - Architecture Search Space Creation through Frequent Computational Subgraph Mining*
Diverse Beam Search for Increased Novelty in Abstractive Summarization


Tony Blair has reiterated his desire to return to frontline politics, speaking about it for the second time in a week. The former Labour premier, who left Downing Street in 2007 after 10 years in power, said he missed being prime minister and was keen to secure a top international job. He said he would have considered the posts of president of the EU or the World Bank if they had been offered to him. And he suggested that the experience [...] he admitted in another interview that he would like to be prime minister again. Mr Blair, now 59, has used his contacts made in Downing Street to build a multi-million-pound business empire since leaving office. [...]