Speech recognition

Speech separation

Voice conversion

Speaker recognition

keyword spotting : 如何省電. 如何压缩模型.

文字 to 文字   seq to seq
translation. summarization. chatbot. Q&A

meta learning = learn to learn
                Be a better learner, learn with little paired data

knowledge graph

adversarial attack { speech
                       text

explanable AI. 臂窝 because ...

①   + copy mechansim
               attention

       encoder ——————> decoder

② ① multiple sequences
                      integrate
                      attention
           [model] ——> [model]
                       S2
               S1
              model
② S1 [SEP] S2

POS tagging
Bert 已经有 POS tag 能力.
   PN V D N
   [model]   [Downstream task]
John saw the saw   PN V D N
                  John saw the saw

word segmentation

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Parsing   引入到 downstream task
           有时候是无监督习

Coreference Resolution 指代消解

Summarization.   词句话时时间

extractive summarization . {binary classifier of each sentence.
abstractive summarization   seq to ~~seq~~ sentence token
                           — seq to seq (copy is encouraged)

Machine Translation   (7000种语言   需要 7000² 语言 pair)
       中文 to 英文   那为什么不是 unsupervised MT? 或者说前面提到多种为
       法语 to 英语 (你不需要中间的过渡)   语translation
       法语 to 德语

Grammar Error Correction . (seq 2 seq)→ 束搭同事力

I am good   copy is encouraged   token class
 |Model| ↓   C to R(could)C A(the)   ↑
                          或者   ↑ ↓ ↓ ↓ ↓ ↓ token ←21
I are good   对话   Bolt can have run race → Bolt could have run the race

Sentiment classification (seq 2 class)

Stance Detection   (seq to class)
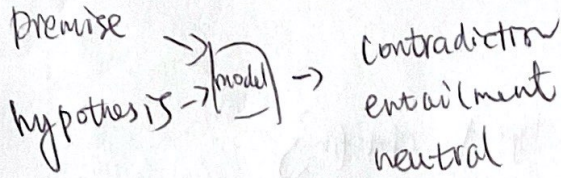   support. denying. querying. commenting (SDQC)
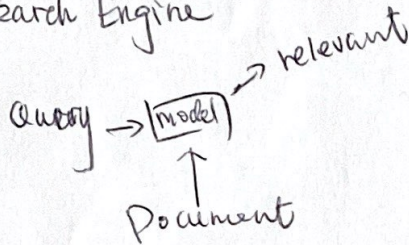   ↓ used in
Veracity Prediction   (several sequences → class)
     Post ⟶ 多个|model| —→ True/False
   Replies wikipedia

Natural Language Inference (NLI)

Premise → → Contradiction
hypothesis → [model] → entailment
neutral

Search Engine

Query → [model] → relevant
↑
Document

Q&A

Watson: (1) Query processing
2500部S集
✗
(3) candidate answer scoring   (4) confidence merging and rank
(2) candidate answer generation

question
→ [QA] → answer
Knowledge source
_____
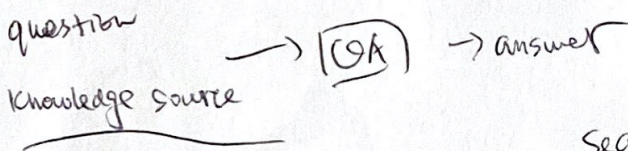
unstructured documents ← search engine

reading comprehension + retriever
extractive QA ($\begin{array}{c}q\\a\end{array}$ → [QA] $\begin{array}{c}\to start\\\to end\end{array}$)
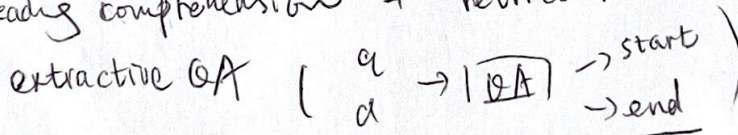
Dialogue: { chatting : cleverbot [seq2seq] (seq to seq) | copy, personality, empathy, knowledge

task-oriented : NLG : action → Greeting
9.9住到9.11层   intent classification   (Npostags)   Policy & State tracker   ASK(check in)
{ slot filling   state → policy → action   根据state   ASK(check out) → NLG

RL分类   根据state   #custom
user input [NLU state tracker]   寻找nextstep   #phone   action

end → end state   check in date 9.9
output   NLG ← [policy]   check out date 9.9+2=9.11

Knowledge Graph   entity
                         relation

Lh documents 抽取 KG?
① extract entity (NER) just like POS tagging, slot fing.
② extract relation (classification problem ∴ none)

Task
   GLUE . super GLUE . DecaNLP (10 tasks)
                        (Q&A)