

[Lec 10]

Motivation

- Massive collections of full-text documents: returning relevant documents is limited of use
→ need answers to questions
- 1. Finding Documents that contain answer → Traditional Information Retrieval
- 2. Finding an answer in a paragraph or a document → Reading Comprehension Task

History

- Tried by a lot of people in the past → not successful
- Machine Comprehension (Burges 2013)
 - challenge problem
→ Answering to a simple story texts
- Open Domain QUESTION ANSWERING
 - architecture LCC : Complex , Multi Components
 - Factoid questions

SQuAD Dataset

Passage + Question given → Answer located inside passage

SQuAD v1

- 3 gold answers
- scored on two metrics: Exact match & F1 (F1 - Primary)
- Ignore punctuation and articles

SQuAD v2

- Not all questions have answers in paragraphs → some answers need to have the label “no answer”
- Adding a threshold : simple approach from SQuAD v1

Limitations

- Only span-based answers
- questions were constructed looking at passages → syntactic & lexical structures similar

Stanford Attentive Reader Model

- minimal, highly successful architecture for reading comprehension & question answering
- Perform fairly well

BiDAF

Bi-Directional Attention Flow for machine Comprehension

- **Attention Flow Layer** (Attention should flow in bth ways)
- Modelling layer
 - 2 layer BiLSTM over the passage
- answering span selection is much more complex
 - Start & End

Elmo & Bert Preview

- Contextual Word Representations
- Transformer on BERT → attention on steroids (lol)