CS 378 Lecture 22

Today - Reading comprehension - Span-based QA - Baseline methods - Attentive reader Recap Knowledge base QA when was Samuel L

Jackson born?

Q

answer - Forma (
representation (X calculus)

- A5 due today - FP out today

Reading Comprehension What temperature should I cook chicken to? E answer What event led to the start of www1? answer (span) . The assessination of Franz Ferdinand took place on ... It led to WW1. main focus Basic pipeline (Wiki) (docs) S Intermetion > Z 10 paragraphs model nans.

Span Extraction Assume: answer can be identified as a span of the docs we look at Baselines

doc: The assassihation of FF led to ww1

Q: what event led to ww1? match against Q: [event] led to ww1 Caused WW9. The assassination of Too fragile!

NN Where is Paris? duc/ Paris is in France. \_\_ passage Answer format Picking a single word: Pi, ..., pn woods Decision is a distribution over the indices 1,..., n Paris is in France Picking a span: O O B-ANS Paris is in France CRF/HMM Not Common

Pick start and end point for fue answer. of FF (aused ww1. Final step: pull out answer which has highest P(start)- P(end)

highest P(start). ((end)

Loop over all legal spans of fewer fram

15 words

(Stanford) Attentive Reader 1) encode question into vector with LSTM Compare q ai az que to each pi 2) encode passage into pi, pr Pi Pz P3 Pu (vector for each word) PI PZ P, Py words 3) Compute START d'ut: X = Softmax; (qTW start p;)

dist over takens in p

General END dist

B = Softmax; (qTW END)

dist over takens in p

Parameters () (x LSTM

(3+9) WSTART WEND

Training Suppose we have docs, a

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(p(i), q(i), x(i), p(i))

gold Start+ end points

gold start tend 2055:  $\log P(x = x^{(i)} | p_1^{(i)}(i))$  $+ \log P(\beta = \beta^{(i)} | p_1^{(i)}, q^{(i)})$ 

Two extensions (next time): D'Additional attention between question + context to capture interactions 2) More complex question encoder Final project: These molels do on their training data o Kay But they don't generalize SQUAD (training): Wiki articles BioASQ, News QA models do biomedical news Sadly here Adversarial data: (see Jiat Liang)