

Annotation Artifacts

- ▶ Some datasets might be easy because of how they're constructed
- ▶ Understanding our datasets is just as important as understanding our models in order to know what they're learning

Task: Natural Language Inference

| | |
|----------------------|---|
| Premise | A woman selling bamboo sticks talking to two men on a loading dock. |
| Entailment | There are at least three people on a loading dock. |
| Neutral | A woman is selling bamboo sticks to help provide for her family. |
| Contradiction | A woman is not taking money for any of her sticks. |

- ▶ To create neutral sentences: annotators *add information*
- ▶ To create contradictions: annotators *add negation*

- ▶ Models can do very well *without looking at the premise*

| | | | |
|--------|-------|-------|--------|
| SNLI | 69.17 | 33.82 | +35.35 |
| MNLI-1 | 55.52 | 35.45 | +20.07 |
| MNLI-2 | 55.18 | 35.22 | +19.96 |

Performance of models that only look at the hypothesis:
~70% on 3-class SNLI dataset

What do we do about this?

- ▶ Why is this a problem? Because our models learn these simple cues and not actually the hard task we want them to learn
- ▶ They don't generalize to challenging new examples without these patterns — understanding this behavior is crucial to explaining what our models are doing!
- ▶ Solutions: build harder tasks, tweak data or training objective to inoculate models against this (many proposals)

Other Tasks: Question Answering

- ▶ Question type is very powerful indicator. Only a couple of locations in this context!

QID: 57c5914570fc4995b2b9daa3e5dfffb83

Question: where did luther spend his career ?

Answer: university of wittenberg

Start Distribution

on 19 october 1512 , he was awarded his doctor of theology and , on 21 october 1512 , was received into the senate of the theological faculty of the university of wittenberg , having been called to the position of doctor in bible . he spent the rest of his career in this position at the university of wittenberg .

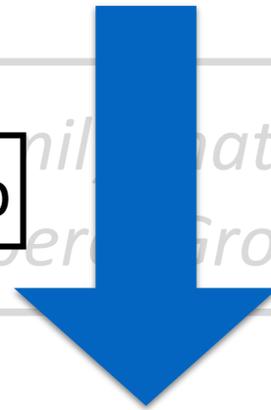
Other Tasks: Multi-hop QA

Question: *The Oberoi family is part of a hotel company that has a head office in what city?*

Doc 1

The Oberoi family is part of a hotel company that is famous for its involvement in hotels, namely through the Oberoi Group ...

High lexical overlap



Doc 2

The Oberoi Group is a hotel company with its head office in Delhi.

...

Other Tasks: SWAG

On stage, a woman takes a seat at the piano. She

- a) sits on a bench as her sister plays with the doll.
- b) smiles with someone as the music plays.
- c) is in the crowd, watching the dancers.
- d) nervously sets her fingers on the keys.**

- ▶ Answers were filtered using ELMo to only leave answers that were difficult for a model to reject...but then BERT solved this dataset easily