

# Q&A with BiDAF+

## Group 20

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# Q&A with BiDAF+

- Q&A entails answering questions about a certain text, context, or document
- Involves building systems that automatically answer questions posed by humans in a natural language
- Machine comprehension: Involves teaching models to read a passage of text(Context) and then answer questions(Query) about it

**Goal:** To improve the BiDAF model to effectively do Q&A tasks on machine comprehension given a context and query

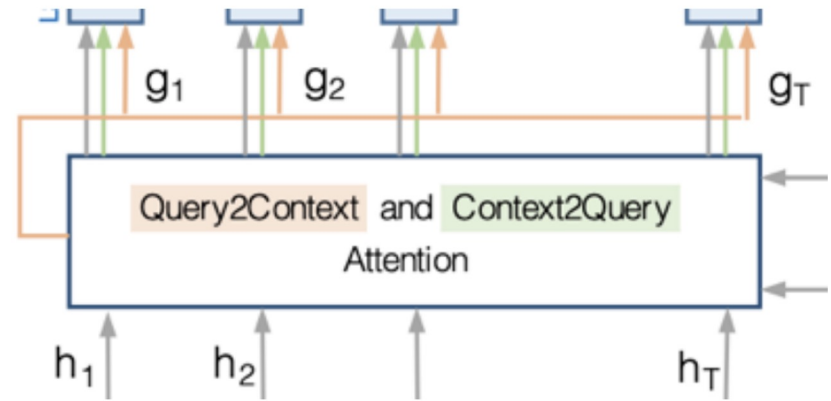
# SQUAD

**Stanford Question Answering Dataset** (SQuAD) is a reading comprehension dataset, consisting of questions posed by crowdworkers on a set of **Wikipedia articles**, where the **answer to every question is a segment of text, or *span***, from the corresponding reading passage, or the question might be unanswerable.

**SQuAD2.0** combines the 100,000 questions in SQuAD1.1 with over 50,000 unanswerable questions written adversarially by crowdworkers to look similar to answerable ones. **To do well on SQuAD2.0, systems must not only answer questions when possible, but also determine when no answer is supported by the paragraph and abstain from answering.**

# Methodology (BiDAF Base-Model)

- *Closed-domain, extractive* Q&A model.
- Stands for Bi-Directional Attentional Flow (BiDAF)
- Trained on SQUAD and TriviaQA
- Uses four main layers: **encoding, attention, modeling, and output layers**
- Uses both **context-to-query** and **query-to-context attention**
- Output Layer predicts start and end positions within the context where the answer lies
- Foundation for our experiments



# Experiments on BiDAF

In this work, besides the baseline model, we explore:

- 1. Embedding operations:**
  - a. Character embeddings
  - b. Token features
- 2. Attention mechanisms:**
  - a. Iterative re-attention
  - b. Coattention
- 3. Other Experiments**

Evaluate different versions of our model with BiDAF(Baseline) and QANet on **EM and F1 Score**

# References

- Minjoon Seo, Aniruddha Kembhavi, Ali Farhadi, and Hannaneh Hajishirzi. Bidirectional attention flow for machine comprehension. arXiv preprint arXiv:1611.01603, 2016.
- Caiming Xiong, Victor Zhong, and Richard Socher. Dynamic coattention networks for question answering. arXiv preprint arXiv:1611.01604, 2016.
- Danqi Chen, Adam Fisch, Jason Weston, and Antoine Bordes. Reading wikipedia to answer open-domain questions. arXiv preprint arXiv:1704.00051, 2017.
- Minghao Hu, Yuxing Peng, Zhen Huang, Xipeng Qiu, Furu Wei, and Ming Zhou. Reinforced mnemonic reader for machine reading comprehension. arXiv preprint arXiv:1705.02798, 2017.