Implementing Dynamically Fused Graph Networks for Multi-Hop Reasoning

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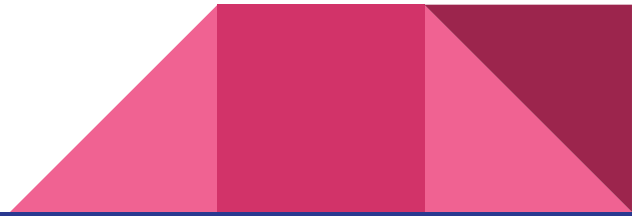
Tasks

Core

1. Re-implement DFGN
    a. Paragraph Selector
    b. Graph Constructor
    c. Encoder
    d. Fusion Block
        i. Doc2Graph
        ii. Dynamic Graph Attention
        iii. Graph2Doc
        iv. Query Updating
    e. LSTM prediction layer
2. Test the re-implemented system
    a. Evaluation scripts

Additional (if there is time left)

1. Knowledge extraction as opposed to just NER
2. Experiments on OpenWiki setting



Timeline

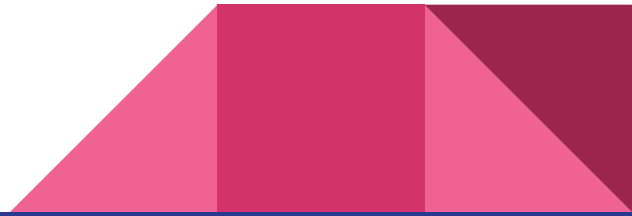
	December		January				February				March	
Week #	1	2	3	4	5	6	7	8	9	10	11	12
Setup & Datasets												
Paragraph Selector												
Graph Constructor												
Encoder												
Fusion Block												
LSTM Prediction Layer												
Experiments												

Data handling

- Code storage & version control: GitHub
- Language models: BERT
- BERT storage: ?
- Datasets: HotPotQA
- Dataset storage: ?
- Training: on Coli GPU cluster

Decisions to Make

- Which NER to use? Stanford CoreNLP? BERT-NER? Both?
- Test on the HOTPOTQA-openWiki setting? What to use for IR?
- Do the ablation studies as well?
- Which BERT version to use? Base? Large?
- Where to store BERT and other models?
- Make a final report/presentation?



Potential Pot-holes

- Code gets lost (1 week)
- GPUs don’t work (properly) (1 week)
- Bugs
  - in the architecture
  - in the evaluation
- Extracurricular delays (2 weeks in total)