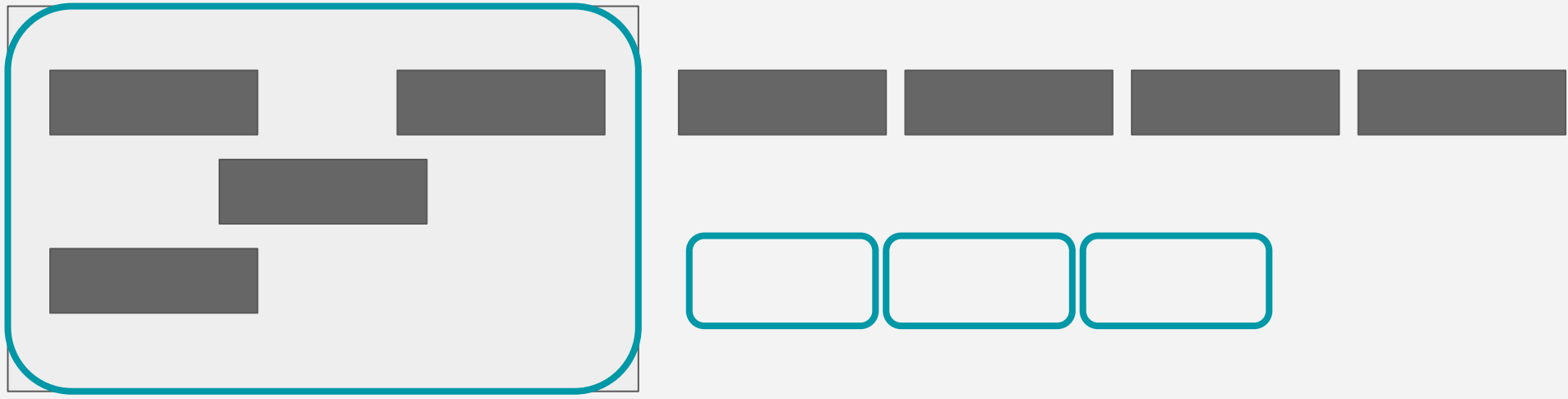


SEMANTIC EVALUATION OF SUMMARIES GENERATED USING RNN AND GAN

Team: Aishwarya Sudhakar, Hrishikesh Kashyap

What?

- Compare abstractive summaries of GAN and RNN



With?

CNN/Daily Mail dataset.

- CNN has 90K stories with summaries
- DailyMail has 197K stories with summaries

Evaluate...

- Compare them using a QA-based semantic evaluation
- Generate entity-based 'WH' questions on ground truth summaries

Barack Hussein Obama II (born August 4, 1961) is an American attorney and politician who served as the 44th **President of the United States** from 2009 to 2017. A member of the Democratic Party, he was the first African American to be elected to the presidency. He previously served as a United States Senator from Illinois (2005–2008).

Question Generator (Article)

Who is Barack Obama?

Who was the 44th President of United States?

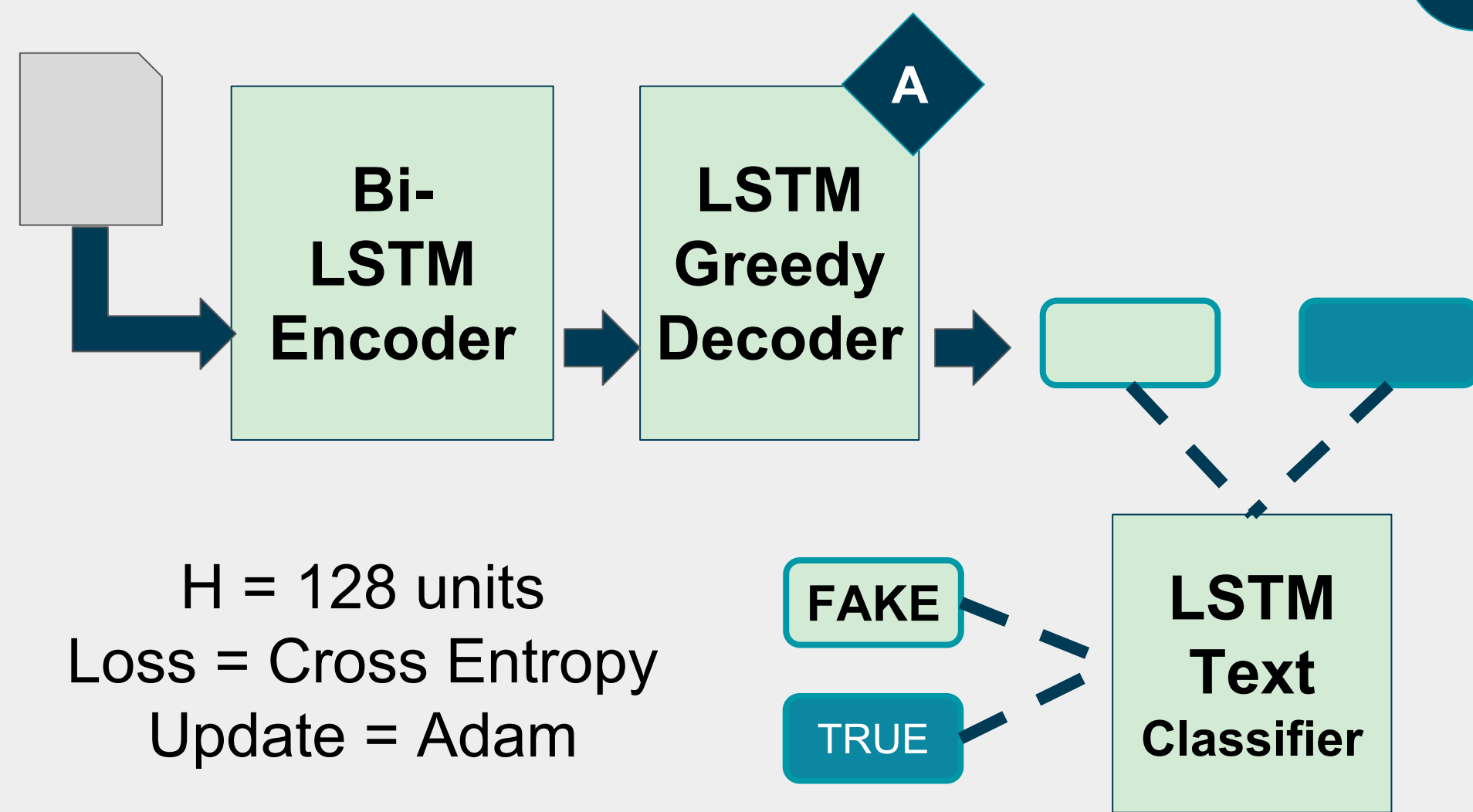
Human Evaluator

Answer Found(s1)

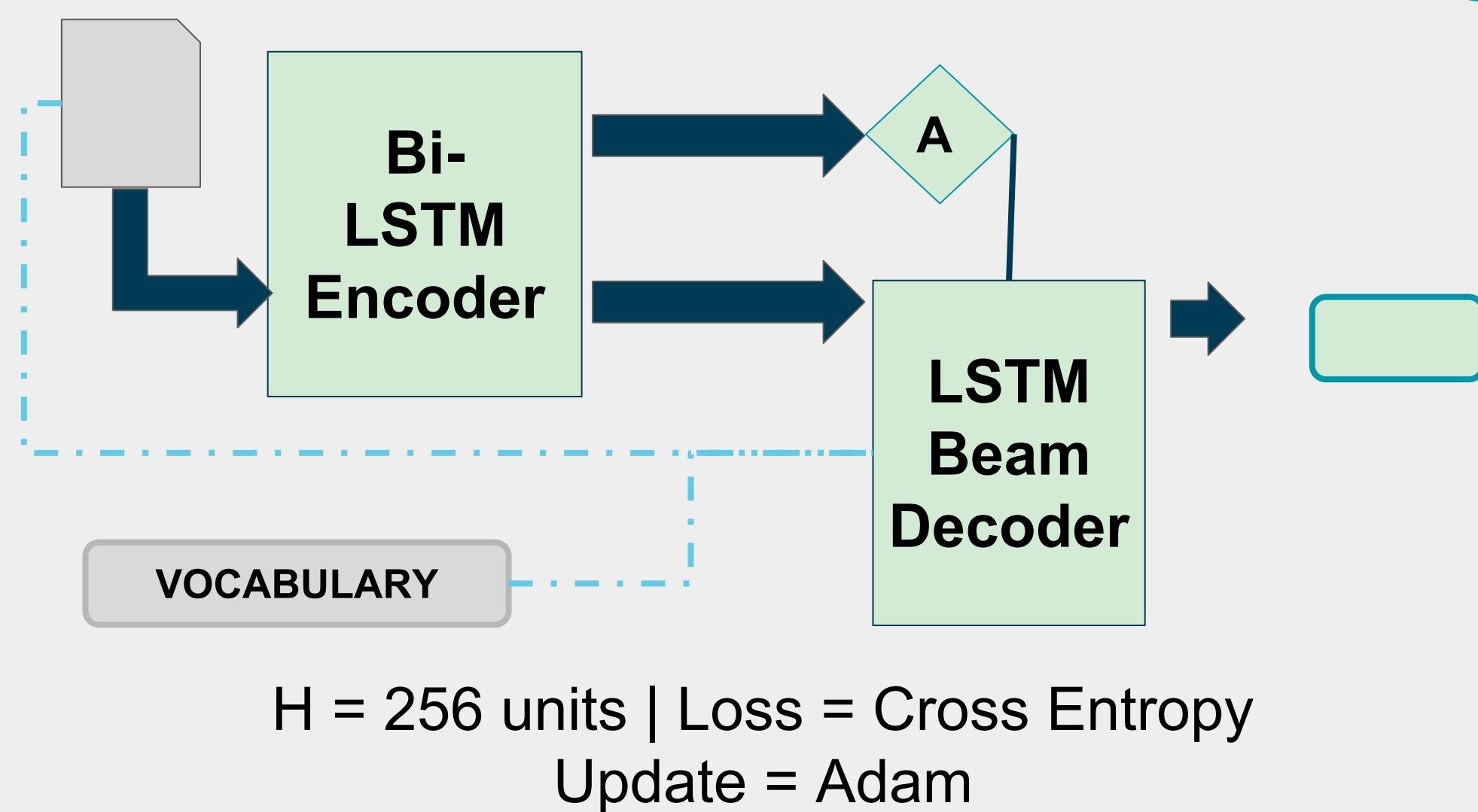
Answer Found(s1,s3)



TextGAN - Model



Pointer Generator RNN - Model



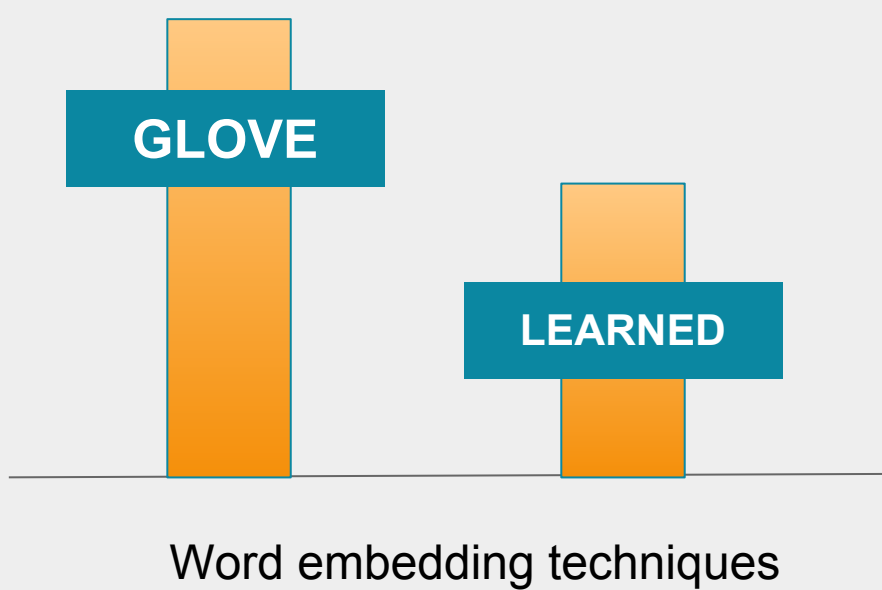
TextGAN - Results

Reference summary: comic book artist norman lee went missing in the cayman islands on thursday .authorities called off search on friday evening .

Generated summary: norman lee , 47 , of cayman ebanks , went missing while snorkeling with his wife off the eastern coast of grand cayman , cnn affiliate wcvb reported .strong currents hindered the search , which lasted until friday evening , cayman 27 reported .strong currents hindered the search , which lasted until friday evening , cayman 27 .

Observations

- Semantically unrelated summaries
- Too many repetitions in words
- Many bad summaries



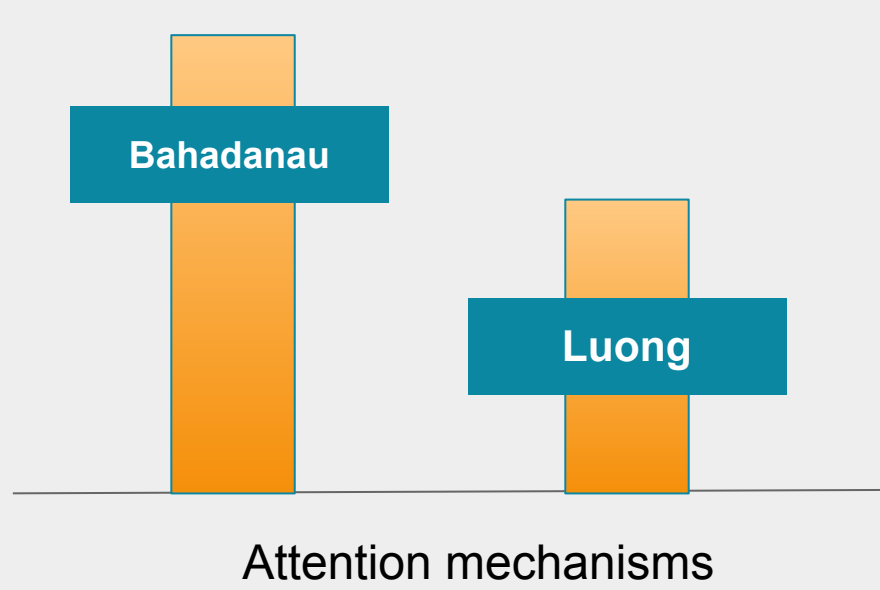
Pointer Generator RNN - Results

Reference summary: comic book artist norman lee went missing in the cayman islands on thursday .authorities called off search on friday evening .

Generated summary: norman lee went missing while snorkeling with his wife off the eastern coast of grand cayman .strong currents hindered the search , which lasted until friday evening , according to reports .`` mali is committed , " chief says .

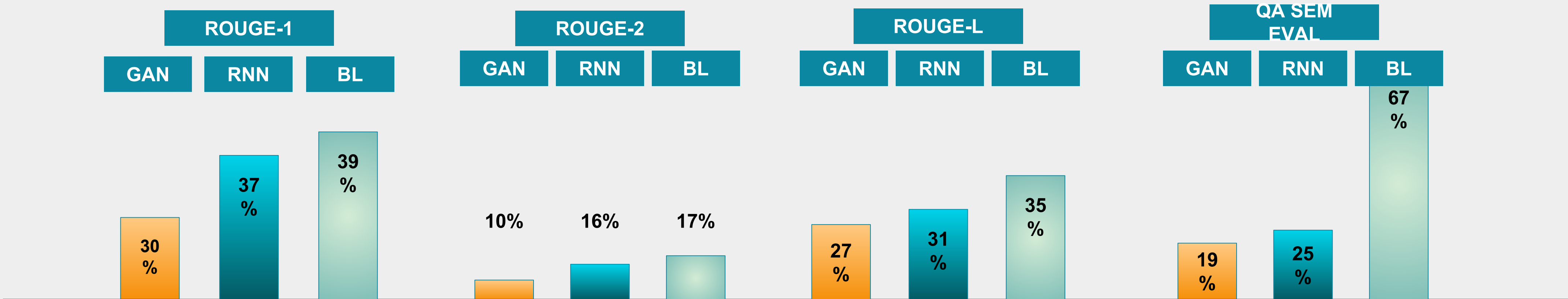
Observations

- Takes too long to train
- Semantically unrelated sentences
- Fewer repetitions than GAN



Comparison...

- Used ROUGE-1, ROUGE-2 and ROUGE-L : F1-Score for baseline metric (Quantitative)
- Used # of Answers generated summary was able to answer (Qualitative)



Future Work: TextGAN: FastText, Add PtrGtr, Beam Search Decoder | PtrGtrRNN: FastText, Glove