

# Question generation

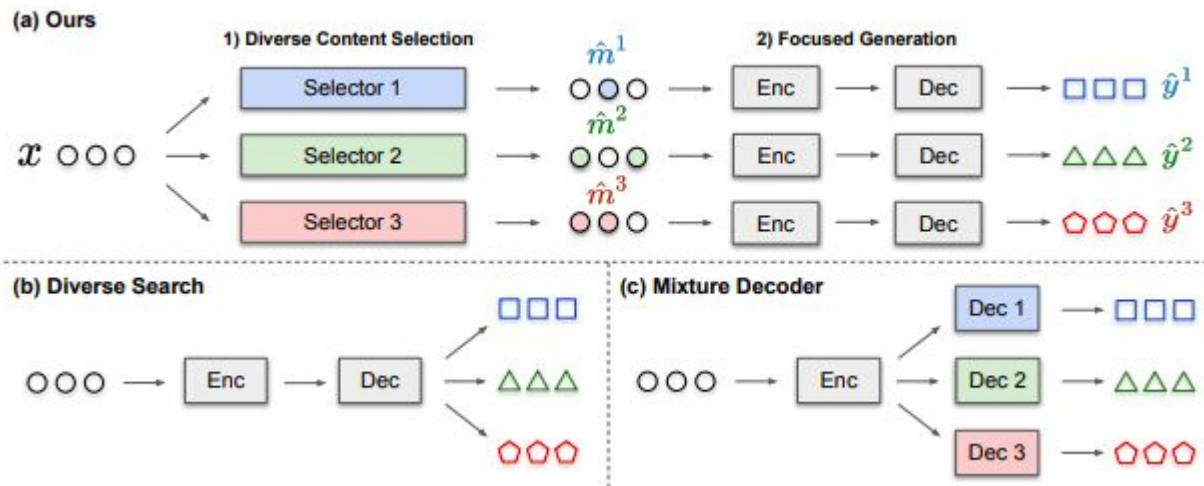
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# Существующие решения

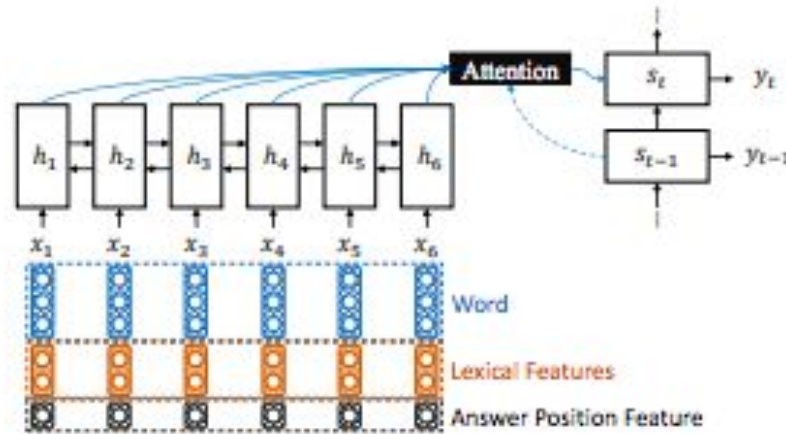
## Mixture Content Selection for Diverse Sequence

**select stage** we  
sample several  
meaningful focus

**generate stage**, each  
sampled focus biases  
the generation process  
towards being  
conditioned on the  
focused content.



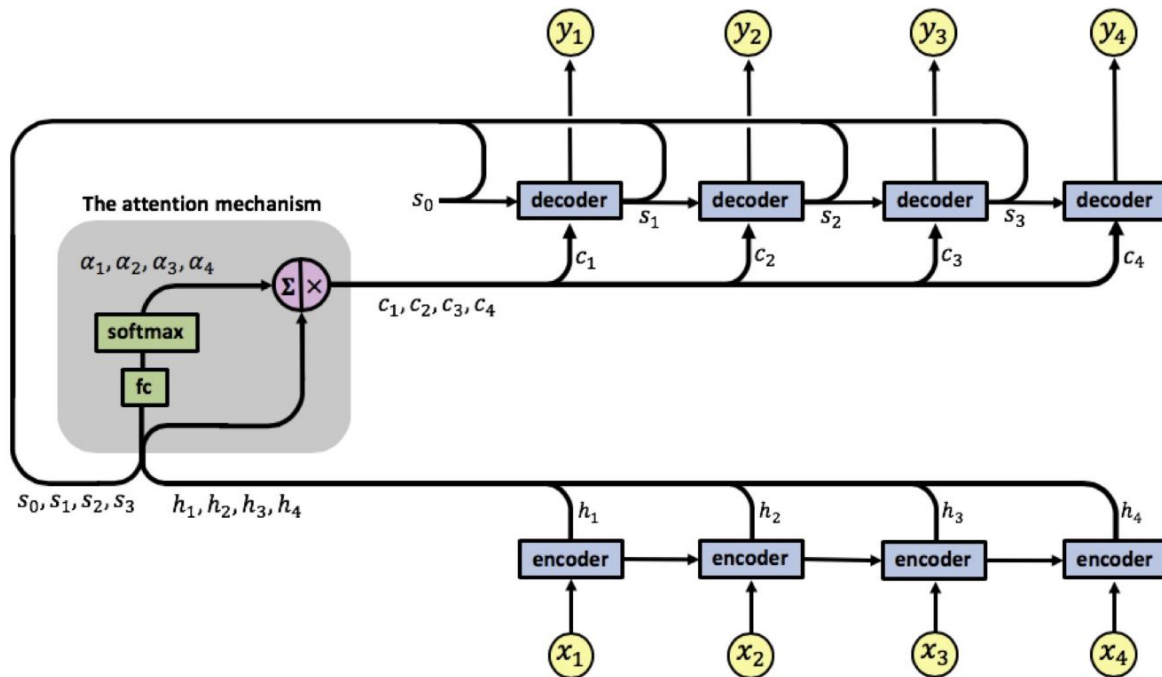
# Neural Question Generation from Text: A Preliminary Study



# Baseline se2seq+attention no additional features

bpe tokenization (16000  
tokens in vocabulary)

best result 2.3  
(CrossEntropyLoss)



# Datasets

<b>SQuAD:</b> 100,000+ question-answer pairs on 500+ articles	<b>Sberquad:</b> 50,000+ question-answer pairs
json parsing	
spacy	NLTK WordPunktTokenizer
spacy	RNNMorph
spacy	DeepPavlov NER
answer position BIO-tagging	

# Datasets

	answer	answer_start	context	is_impossible	question	title
0	in the late 1990s	269	Beyoncé Giselle Knowles-Carter (/bi:'jɒnseɪ/ b...	False	When did Beyonce start becoming popular?	Beyoncé
1	singing and dancing	207	Beyoncé Giselle Knowles-Carter (/bi:'jɒnseɪ/ b...	False	What areas did Beyonce compete in when she was...	Beyoncé
2	2003	526	Beyoncé Giselle Knowles-Carter (/bi:'jɒnseɪ/ b...	False	When did Beyonce leave Destiny's Child and bec...	Beyoncé
3	Houston, Texas	166	Beyoncé Giselle Knowles-Carter (/bi:'jɒnseɪ/ b...	False	In what city and state did Beyonce grow up?	Beyoncé
4	late 1990s	276	Beyoncé Giselle Knowles-Carter (/bi:'jɒnseɪ/ b...	False	In which decade did Beyonce become famous?	Beyoncé

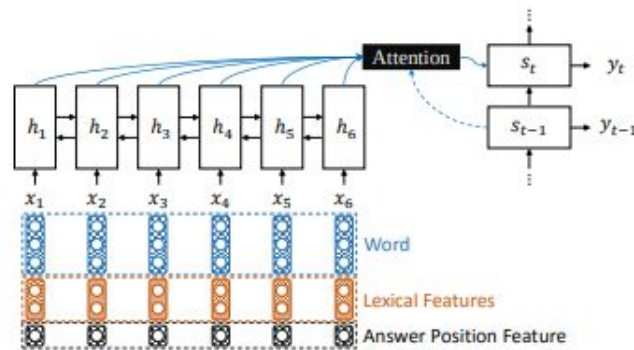
	context	question	POS	NER	case	BIO
0	beyoncé giselle knowles - carter ( /bi: 'jɒnseɪ/...	when did beyonce start becoming popular ?	PROPN PROPN PROPN PUNCT PROPN PUNCT ADJ NOUN P...	O O O O O O O O O O O O O O O DATE DATE DATE D...	UP UP UP LOW UP LOW LOW LOW LOW UP LOW LOW LOW...	O O O O O O O O O O O O O O O O O O O O O O O ...
1	beyoncé giselle knowles - carter ( /bi: 'jɒnseɪ/...	what areas did beyonce compete in when she was...	PROPN PROPN PROPN PUNCT PROPN PUNCT ADJ NOUN P...	O O O O O O O O O O O O O O O DATE DATE DATE D...	UP UP UP LOW UP LOW LOW LOW LOW UP LOW LOW LOW...	O O O O O O O O O O O O O O O O O O O O O O O ...
2	beyoncé giselle knowles - carter ( /bi: 'jɒnseɪ/...	when did beyonce leave destiny 's child and be...	PROPN PROPN PROPN PUNCT PROPN PUNCT ADJ NOUN P...	O O O O O O O O O O O O O O O DATE DATE DATE D...	UP UP UP LOW UP LOW LOW LOW LOW UP LOW LOW LOW...	O O O O O O O O O O O O O O O O O O O O O O O ...
3	beyoncé giselle knowles - carter ( /bi: 'jɒnseɪ/...	in what city and state did beyonce grow up ?	PROPN PROPN PROPN PUNCT PROPN PUNCT ADJ NOUN P...	O O O O O O O O O O O O O O O DATE DATE DATE D...	UP UP UP LOW UP LOW LOW LOW LOW UP LOW LOW LOW...	O O O O O O O O O O O O O O O O O O O O O O O ...
4	beyoncé giselle knowles - carter ( /bi: 'jɒnseɪ/...	in which decade did beyonce become famous ?	PROPN PROPN PROPN PUNCT PROPN PUNCT ADJ NOUN P...	O O O O O O O O O O O O O O O DATE DATE DATE D...	UP UP UP LOW UP LOW LOW LOW LOW UP LOW LOW LOW...	O O O O O O O O O O O O O O O O O O O O O O O ...

# Model

## Seq2Seq with Attention

Tricks: pack padded sequences, masking, dropout, teacher forcing

BiGRU encoder input: word vector + lexical feature embedding vector + answer position indicator embedding vector.



# Evaluation

- Inference
- BLeU: NLTK corpus bleu ~2,5 :(

Examples:

target	predicted
beyoncé is a descendant of which acadian leader ?	who is the 's father ?
when did chopin 's relationship with sand start to deteriorate ?	when did chopin die ?
who sculpted chopin 's tombstone ?	who designed chopin 's tombstone ?
what publication revealed information about the working conditions of ipod labor ?	what magazine reported the the of the the ?