Reading Comprehension

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Reading comprehension

- Inputs: passage of text, question
- Outputs: answer

In meteorology, precipitation is any product of the condensation of atmospheric water vapor that falls under gravity. The main forms of precipitation include drizzle, rain, sleet, snow, graupel and hail... Precipitation forms as smaller droplets coalesce via collision with other rain drops or ice crystals within a cloud. Short, intense periods of rain in scattered locations are called "showers".

What causes precipitation to fall? gravity

What is another main form of precipitation besides drizzle, rain, snow, sleet and hail? graupel

Where do water droplets collide with ice crystals to form precipitation? within a cloud

Dataset: SNLI(Precursor)

- Stanford Natural Language Inference.
- Not quite reading comprehension, but similar.
- Textual entailment: does one sentence entail another?

Released	# Questions	# Passages	Human	Random
EMNLP 2015	570k	570k	~90	33

Passage type	A "text" sentence and a "hypothesis" sentence One question: entails?	
Question type		
Answer type	{entails, contradicts, neutral}	

Methodology

Non lexical features:

- (i) BLEU Score for entailment
- (ii) Absolute difference of word length
- (iii) Overlap between words

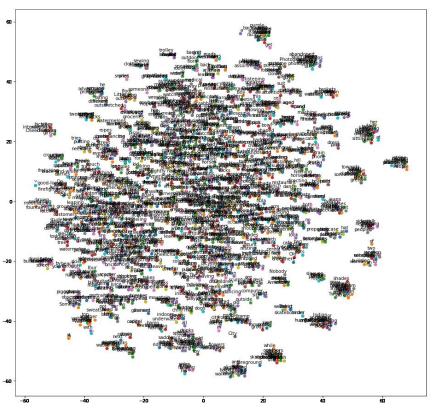
Logistic Regression using non lexical features:

	Distance Metric	Accuracy
	L1	61.15%
1	L2	60.75%

Support Vector Machine using non lexical features:

Kernel	Accuracy	
Linear	61.05%	
Radial Basis	61.89%	
Poly	54.33%	

Co-occurrence matrix



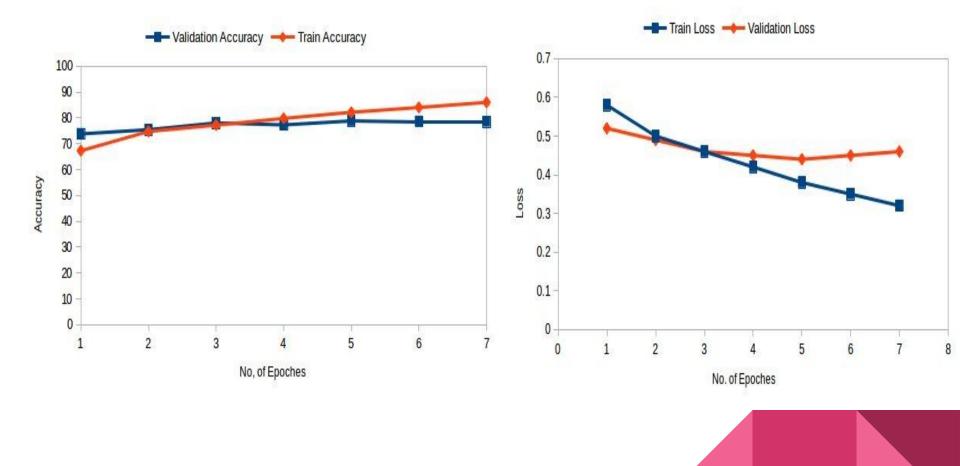
Logistic Regression using co-occurrence matrix features

Distance Metric	Accuracy
L1	62.53%
L2	62.43%

Support Vector Machine using using co-occurrence matrix features:

Kernel	Accuracy	
Linear	62.13	
Radial Basis	65.33	
Poly	63.13	

Convolutional Nets input_1: InputLayer embedding_1: Embedding convld_3: ConvlD convld_1: ConvlD convld_2: ConvlD max_pooling1d_1: MaxPooling1D max_pooling1d_2: MaxPooling1D max_pooling1d_3: MaxPooling1D merge_1: Merge convld_4: ConvlD max_pooling1d_4: MaxPooling1D convld_5: ConvlD max_pooling1d_5: MaxPooling1D flatten_1: Flatten dense_1: Dense dense_2: Dense



Convolutional Network - Siamese

