Task

- Developing really effective relation extraction systems using distant supervision.

- Relations: adjoins, author, capital, contains, film_performance, founders, genre, has_sibling, has_sponse, is_a, nationality, parents, place_of_birth, place_of_death, profession, worked_at

- Report macro-average F1 score for all relations.
Results Histogram
Results Histogram

simple_bag_of_words_featurizer baseline
Top Performing Systems

Featurizers >> Model Architecture!

Top 2 systems both used *LogisticRegression* but had 8+ different featurizers.
Top 15 Systems

On average, just over 5 featurizers.

- Play madlibs with words like “left”, “right”, “middle”, “directional”, “POS”, “bigram”, “trigram”
- If you’re only allowed to feature functions, which should it be? middle_bigram_pos_tag_featurizer, directional_bag_of_words_featurizer

66% LogisticRegression, 33% RandomForest

- Not uncommon to see groups experiment with other classifiers… but they keep coming back to LogReg
featurizers = [simple_bag_of_words_featurizer,
directional_bag_of_words_featurizer,
middle_bigram_pos_tag_featurizer,
left_bag_of_words_featurizer,
right_bag_of_words_featurizer,
middle_length_featurizer,
dir_left_sent_bag_of_words_featurizer,
dir_right_sent_bag_of_words_featurizer,
dir_glove_entity_featurizer,
dir_glove_middle_sum_featurizer,
dir_glove_middle_example_featurizer]
featurizers = [add_unigrams, add_bigrams, 
              add_trigrams, 
              add_selected_unigrams, 
              add_POS_unigrams, 
              add_POS_tag_bigrams, 
              add_left_right_features ]
The less Magnificent Systems...
Not a lot of feature juice...

featurizers = [middle_length_featurizer]
[middle_bigram_pos_tag_featurizer]
[middle_trigram_pos_tag_featurizer]
[middle_bigram_pos_tag_featurizer] + [middle_length_featurizer]
[middle_bigram_featurizer]

Tried fancier models...

Model = [SVC(gamma=2, C=1)]
[neural_classifier = lambda: MLPClassifier(alpha=1)]
[model_factory_orig = lambda: AdaBoostClassifier()]
[lambda: SGDClassifier(loss = 'modified_huber', alpha=1e-4, epsilon =1e-1)]