# Bake-off 3

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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

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simple_bag_of_words_featurizer
baseline
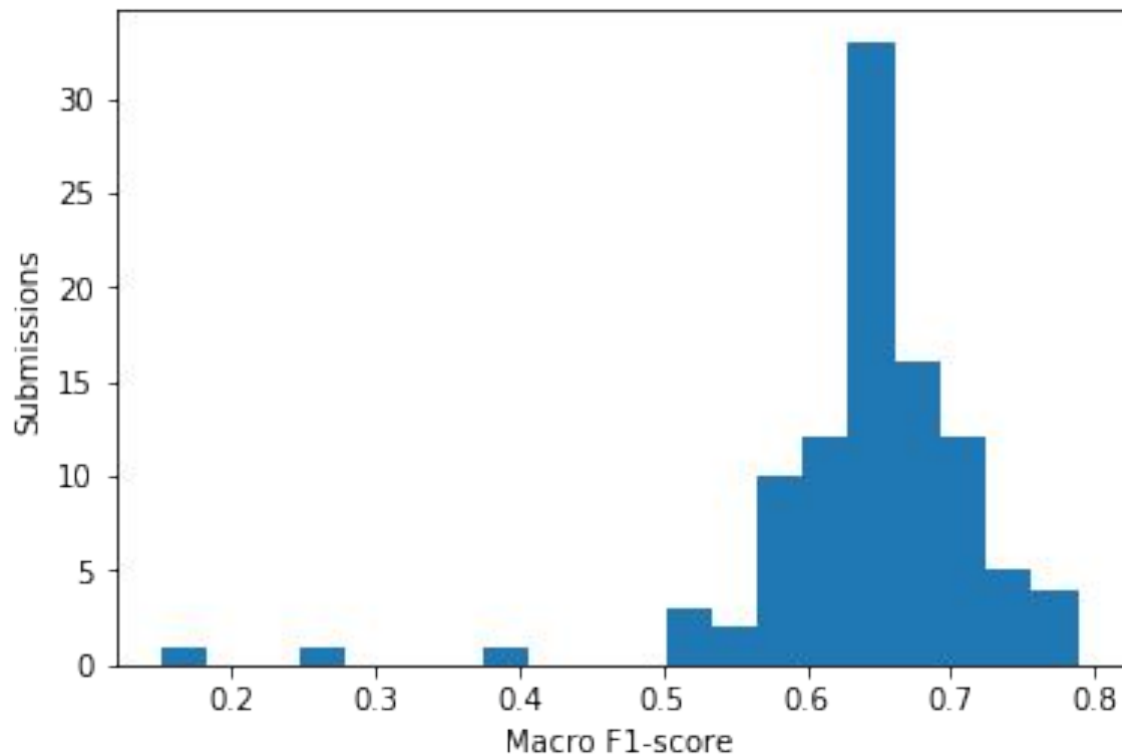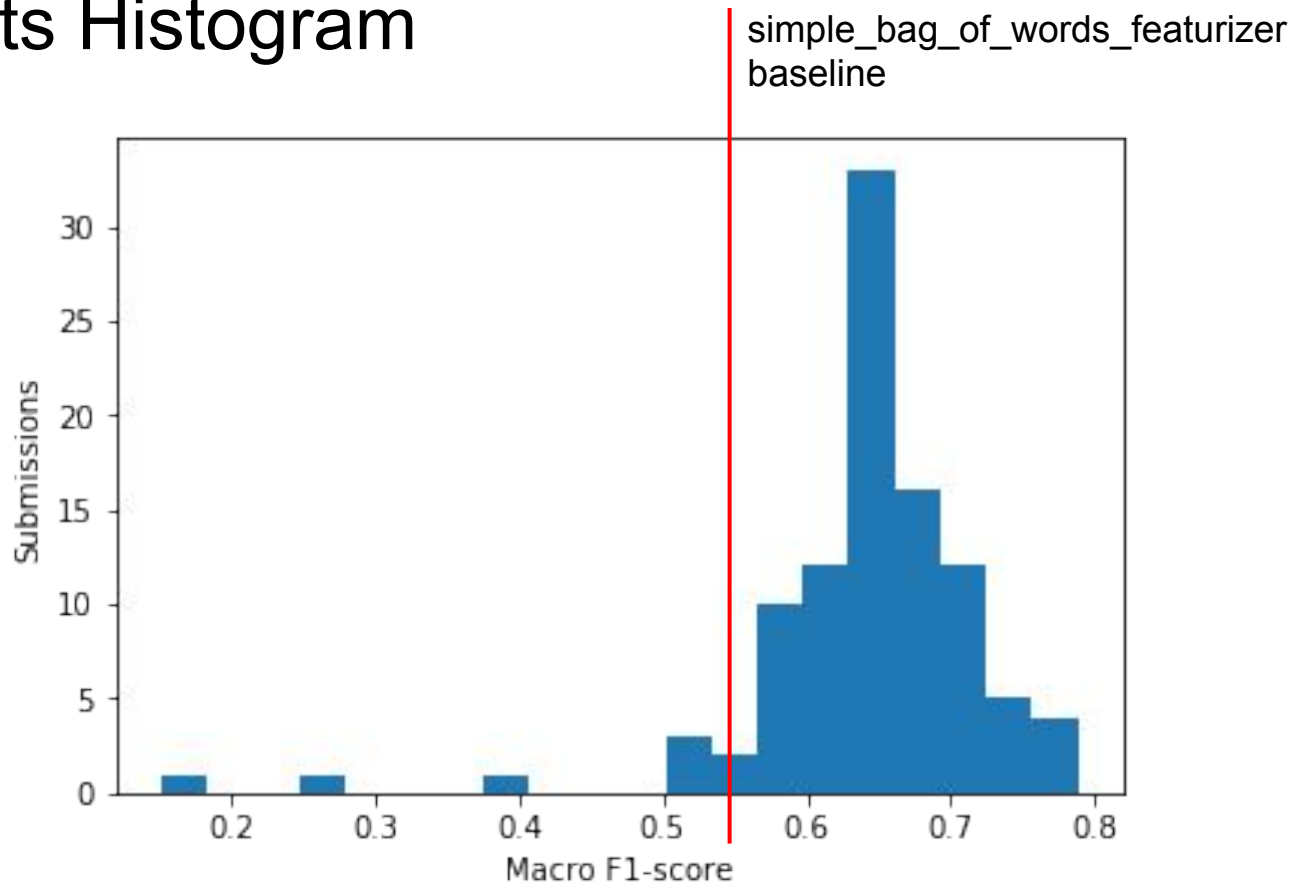
Top Performing Systems

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

1 Kaan, Tyler, and Kutay

```
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]
```

0.786

2 Jingying

```
featurizers =  [add_unigrams, add_bigrams,
                add_trigrams,
                add_selected_unigrams,
                add_POS_unigrams,
                add_POS_tag_bigrams,
                add_left_right_features ]
```

0.782

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)]