

RHYME IS PRIME

1

BACKGROUND

Current poem generators underperform in readability

Rhyming words add rhythm to a poem - enhance readability

Types of end rhyme:

- perfect rhyme

CAT
HAT

- slant rhyme

PACT
SLACKED

AIM: To determine the most accurate way of detecting whether two English words rhyme

2

METHOD

1. Collect Data

webscraped:
rhymmer.com

about 250,000
pairs of
rhyming and
non- rhyming
words

2. Get Phonemes

Get the phoneme
translation of both
words using
pronunciation
dictionary (IPA /
CMU)

word: cheese
phonemes: CH IY Z

3. Extract Features

- Edit distance
- Hamming Distance
- Jaccard Similarity
- Longest Common Substring
- Vowel and Consonant Weights

4. Classify

*Logistic
Regression*

Classify as
rhyming or not

3

RESULTS

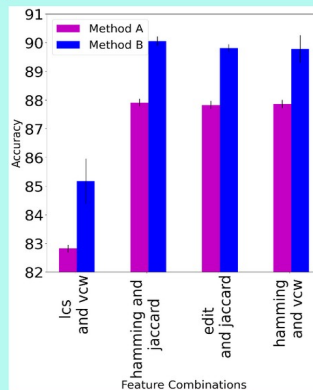
1. What
(pronunciation)
dictionary should
be used?

CMU and IPA

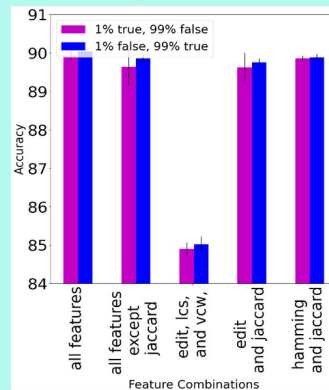
2. What feature
combination
should be used?

Jaccard and
hamming - 90.05%

3. Should the entire
phoneme or part of the
phoneme be used?



4. Does it detect more
rhyming or non-rhyming
pairs?

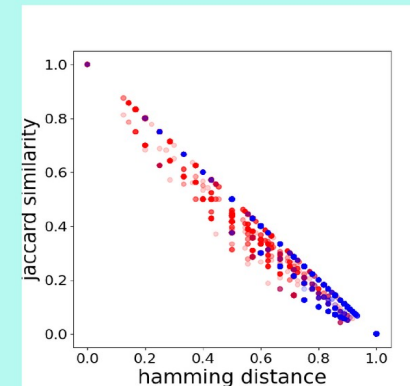


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CONCLUSION

Striking feature:
Vowel and Consonant Weights - Thought it would be an important feature

Unclear why jaccard similarity and hamming distance are the most important features - no clear separation



5

FUTURE WORKS

Extended to detect slant rhymes and perfect rhymes

Model that takes one word as input and returns a list of rhyming words

- Large dataset of words