

# RHYME IS PRIME

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## 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**

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## METHOD

### 1. Collect Data

webscraped:  
rhymer.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

1. Edit distance
2. Hamming Distance
- 3 .Jaccard Similarity
4. Longest Common Substring
- 5 Vowel and Consonant Weights

### 4. Classify

*Logistic  
Regression*

Classify as  
rhyming or not

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## RESULTS

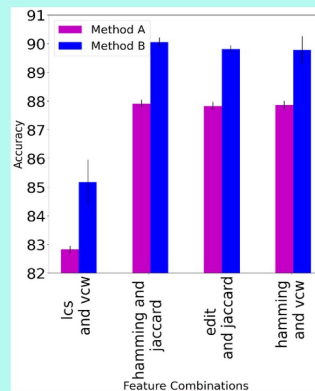
1. What  
(pronunciation)  
dictionary should  
be used?

CMU and IPA

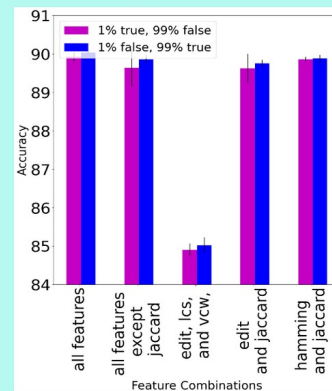
2. What feature  
combination  
should be used?

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?

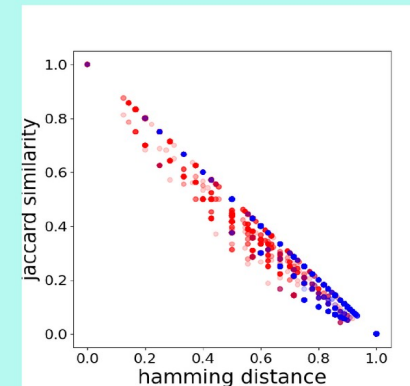


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## CONCLUSION

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



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## 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