



PREDICTING POETIC MOVEMENTS

BY JOSHUA SZYMANOWSKI

WHY?





A LOOK AT THE DATA

SOURCE

poetryfoundation.org

TOTAL POEMS

5,176 → 4,376

TARGET

genre

YEARS

1780 - present

WORDS

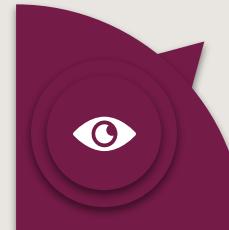
1,034,736 – 110,723 unique

TARGET

Pre-1900
(23.8%)



Modern
(29.2%)



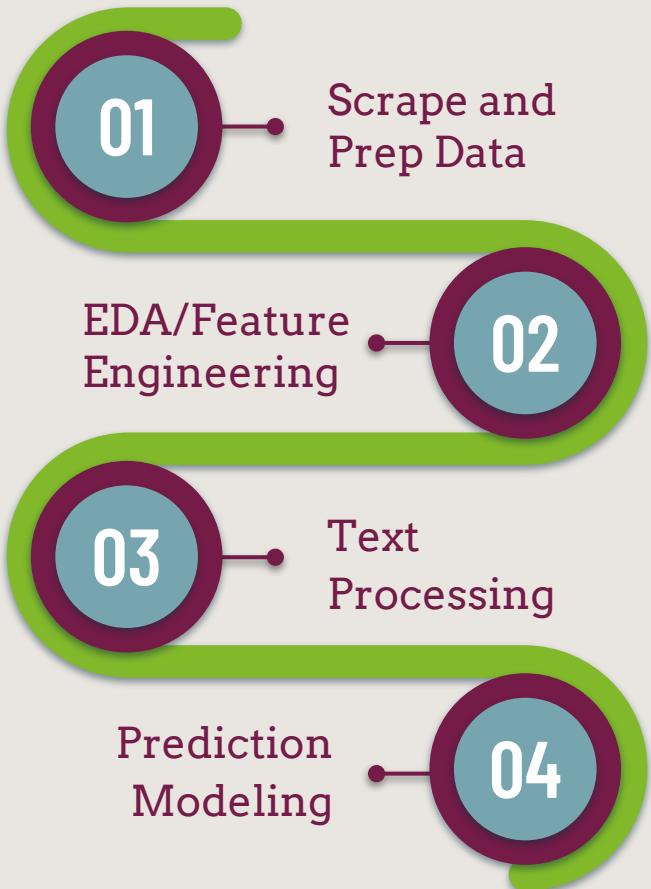
Metropolitan
(25.0%)



Avant-Garde
(22.0%)



ROADMAP



MODEL PREVIEW



ACCURACY

46.7%

F1 SCORE

42.6%



ACCURACY

47.2%

F1 SCORE

47.0%



ACCURACY

62.6%

F1 SCORE

62.1%



ACCURACY

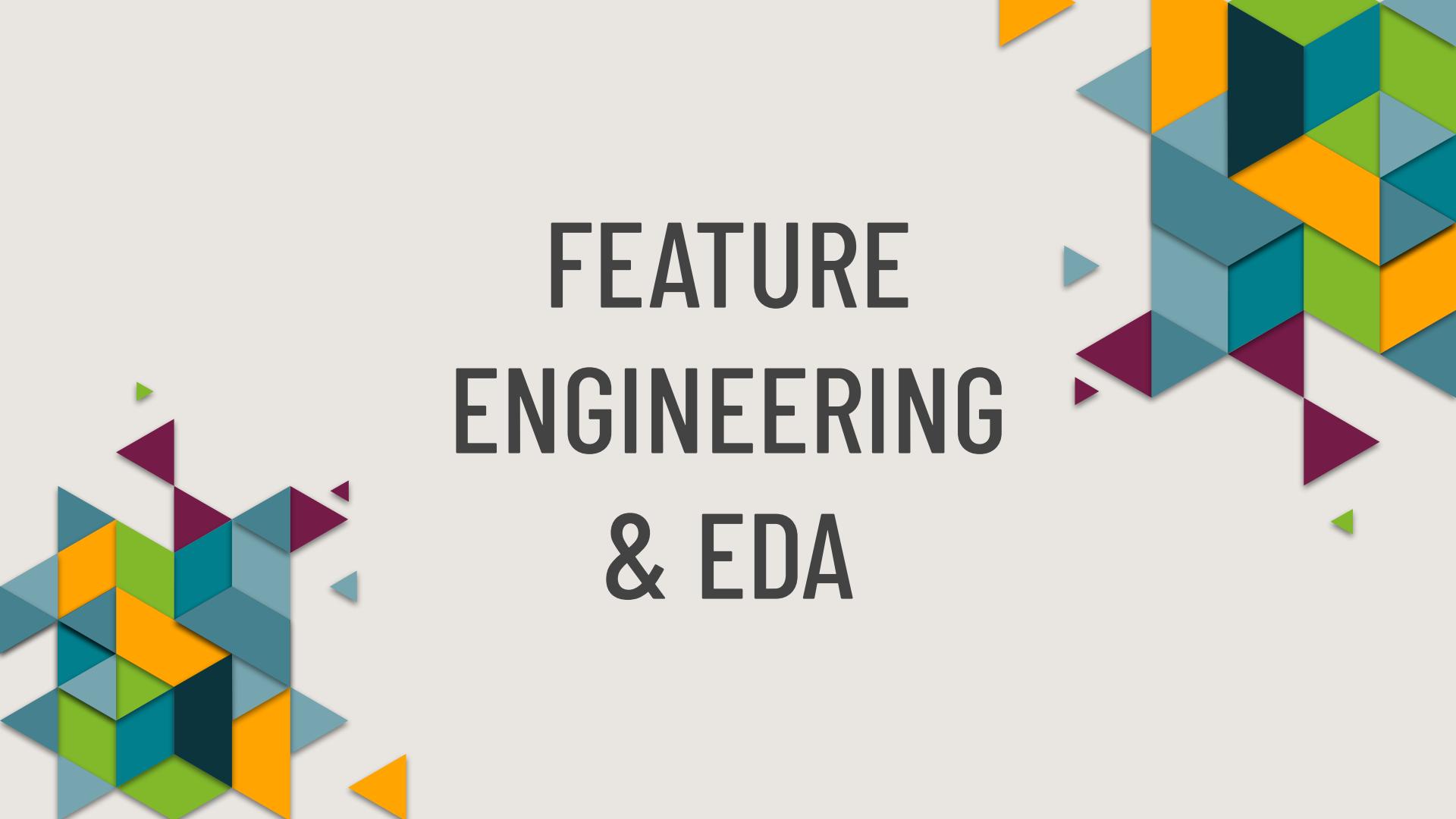
67.8%

F1 SCORE

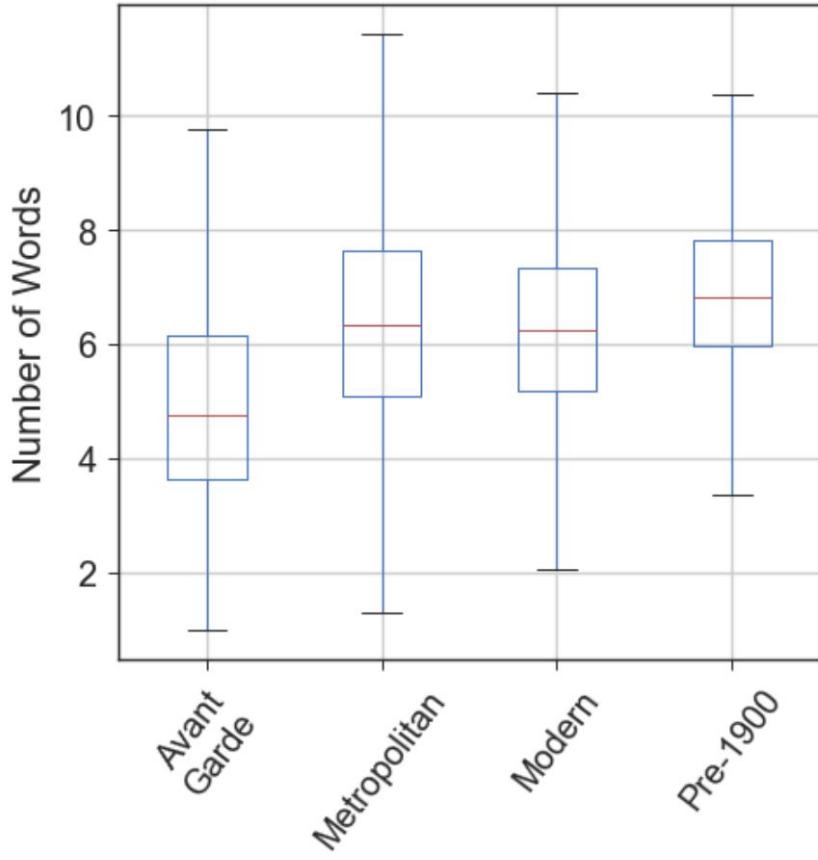
67.8%



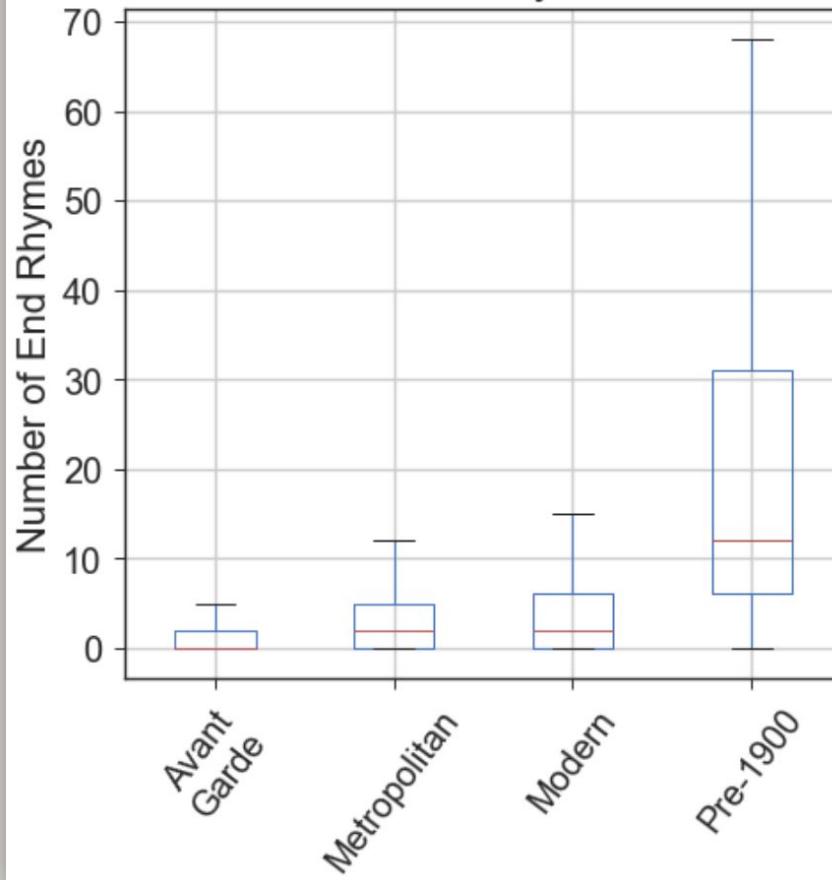
FEATURE ENGINEERING & EDA



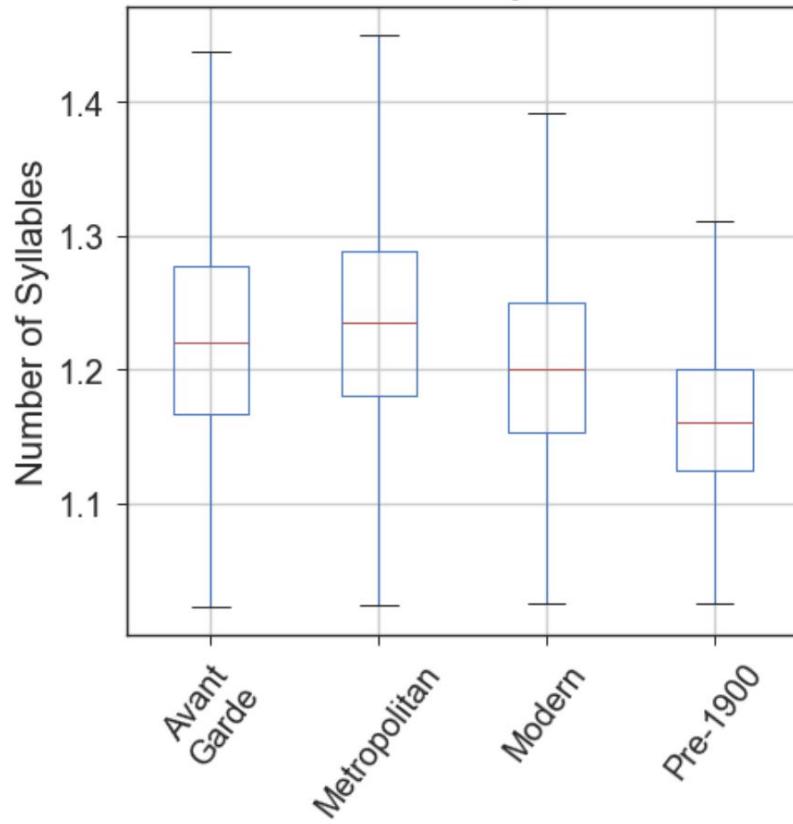
Average Line Length per Poem, Distribution by Genre



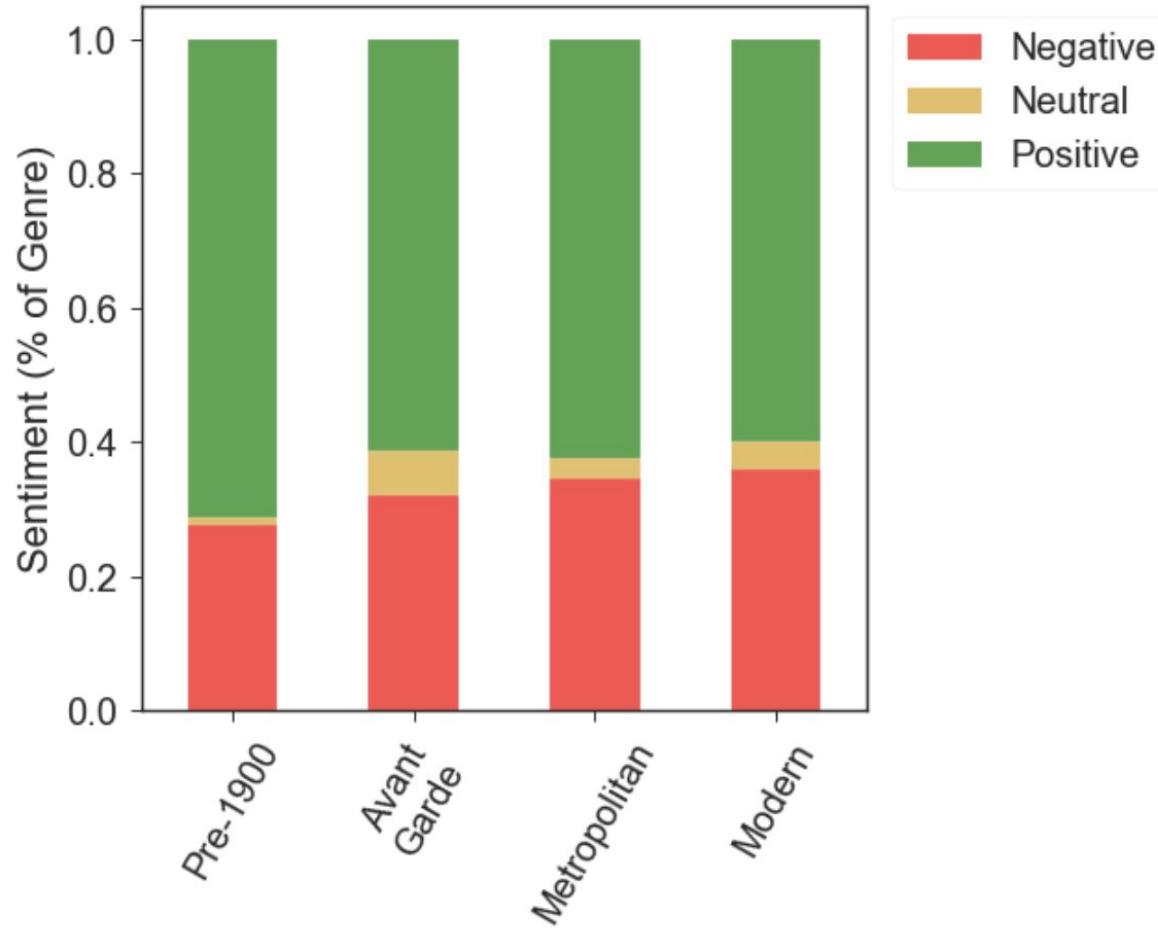
Number of End Rhymes, Distribution by Genre



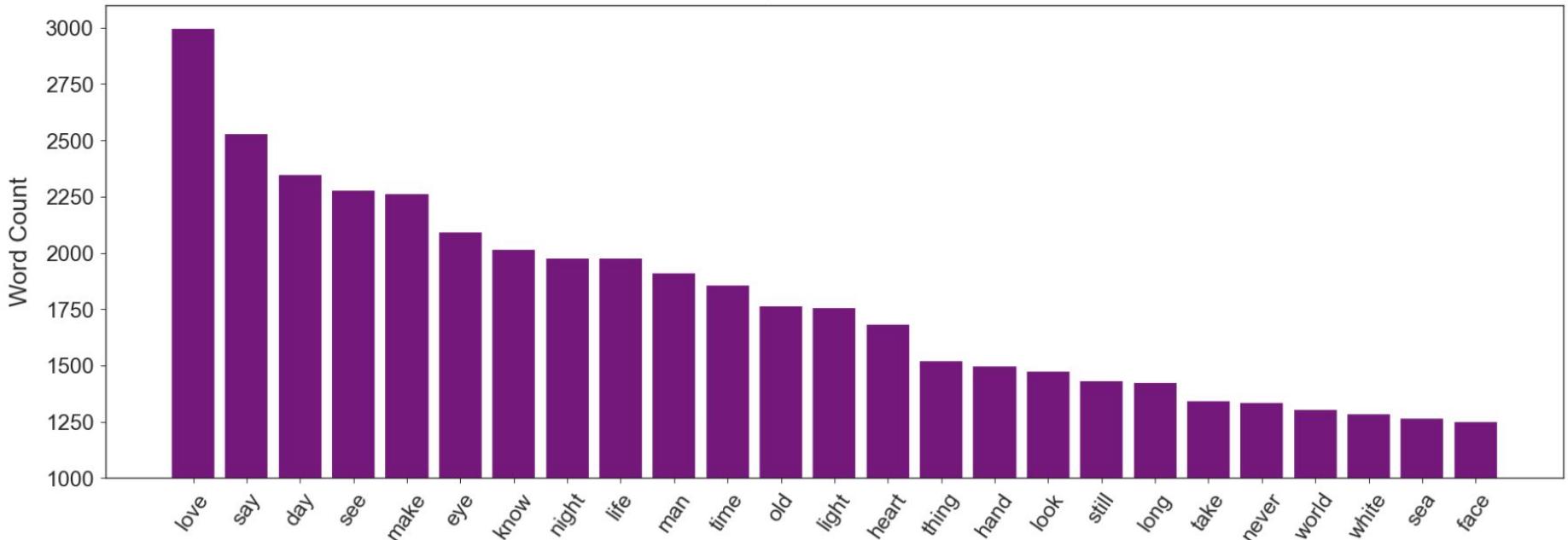
Average Number of Syllables Per Word, Distribution by Genre



The Polarity of Poetic Genres



Top 25 Words



Metropolitan

Modern

people light heart long grow mountain hold silver finger half verse
black mind bird blood flower alone god young color yellow gold last
hour shadow young color stone high set rain another hair
away show grass city die
moon without keep thought star stone live
music first round left lie sing green well cold room good
must first round foot soul till born touch street
work find poem men red sweet river song
find spring sprout winter name place end smile hill part
fall water two thing strong land fire wave
take move much summer air nothing turn and wing
tree summer back wall always walk
night far dust way something new heard open sky word
bright cry laugh sleep house wait arm home dark
every window whose cloud silence golden fly friend
full laugh house sun never think in play
day stand over earth call hear heaven beauty little
death look sound door change great dream leaf

Avant-Garde

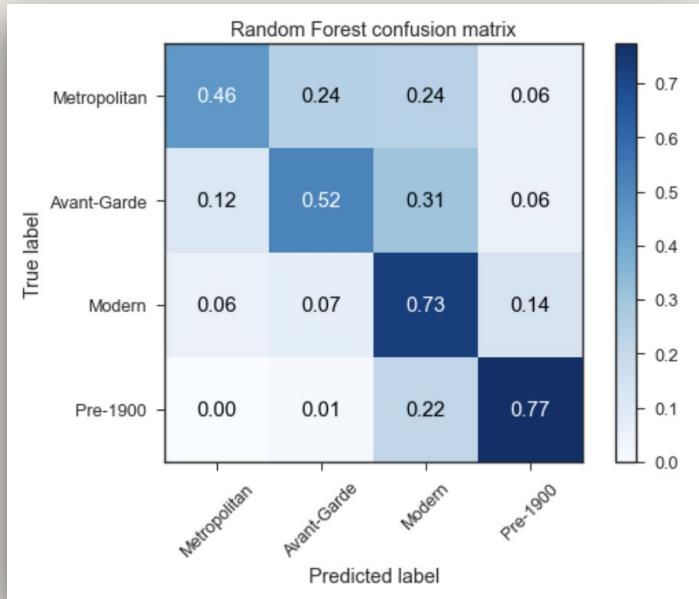
Pre-1900

golden
man part
sweet leaf-wood clear
old poor cry voice star inside
thought ever air must forth
rise wing stood fill
mountain smile Whose great gold
day cold earth spring foot
eye red song white
far bed tell left mind sight
thing till night know water
mineyly till though
hand sea never
leave lose pale
good high dream seem
long breath form
make place pain
see even silent
soul die even
time give beneath
say pa-breast
friend half since
name young saw
black cloud night
child first

MODELS

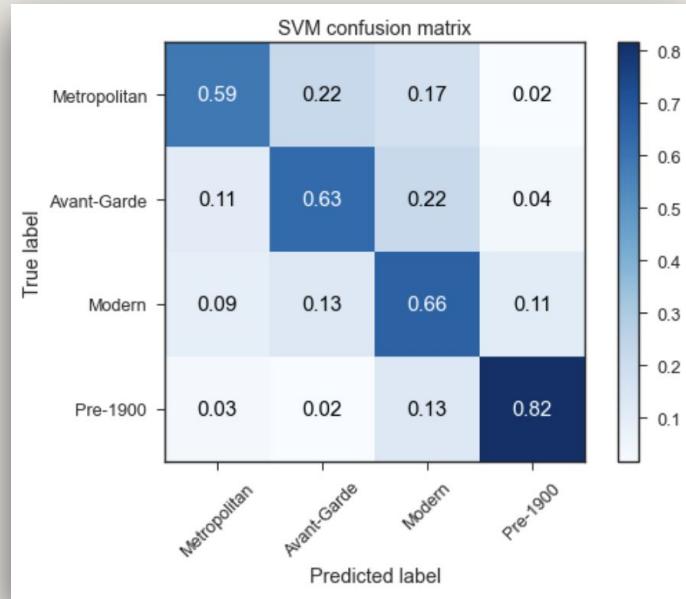


RANDOM FOREST MODEL



ACCURACY 62.6%
F1 SCORE 62.1%

SVM MODEL



ACCURACY 67.8%
F1 SCORE 67.8%

RANDOM FOREST

SVM

TOP FEATURES

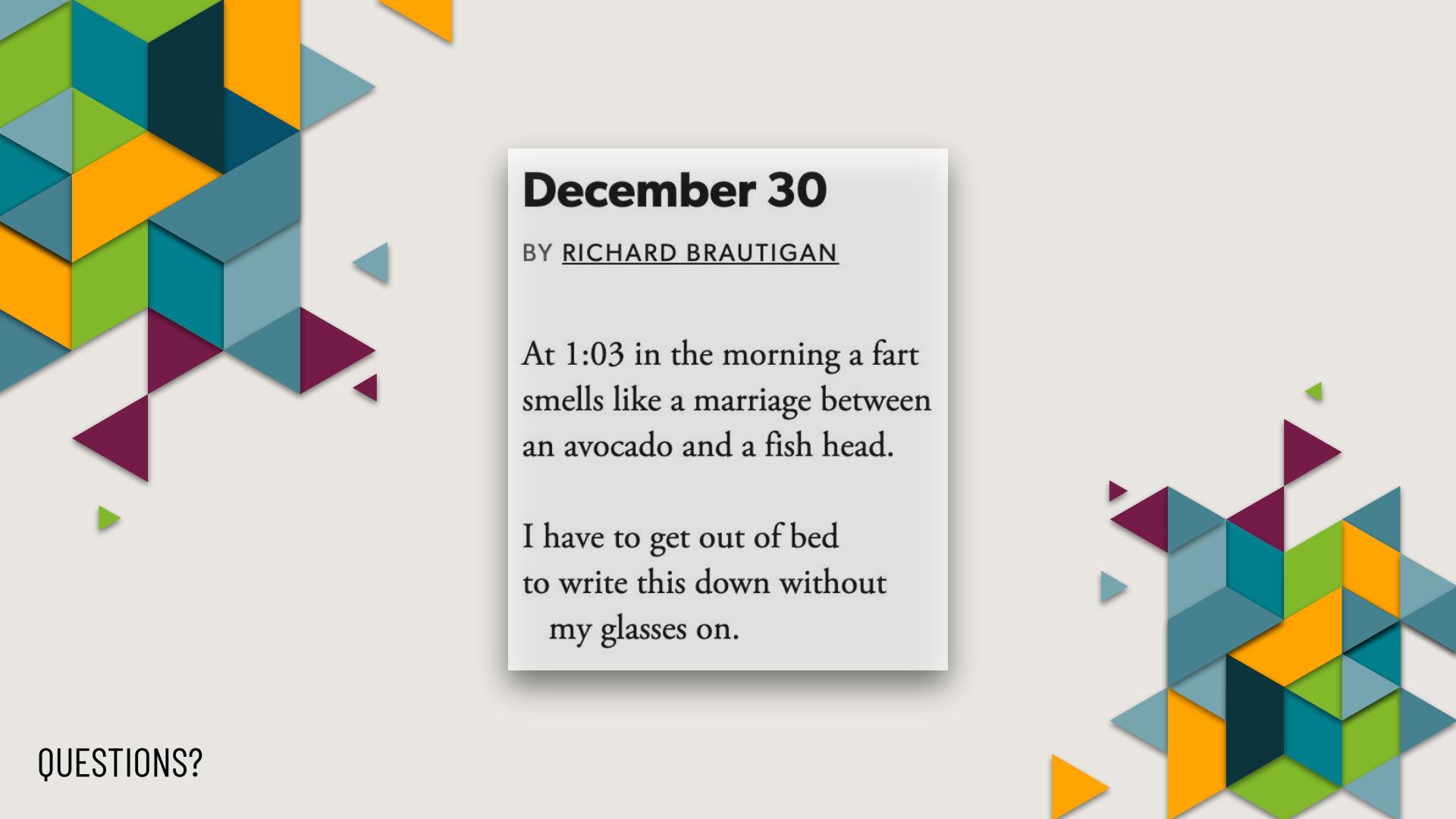
number of end rhymes, length of line,
syllables per word, number of lines,
polarity score, sentiment score

length of line, *among, black, get, dream,*
look, cry, crazy, leaf, sing



TAKEAWAYS

- Pre-1900 poetry is easily recognized
 - End rhymes and length of line
 - Form is important for prediction
 - SVM relies mostly on vocabulary
 - Poetry is rarely neutral (and generally positive)
- 



December 30

BY RICHARD BRAUTIGAN

At 1:03 in the morning a fart
smells like a marriage between
an avocado and a fish head.

I have to get out of bed
to write this down without
my glasses on.

QUESTIONS?