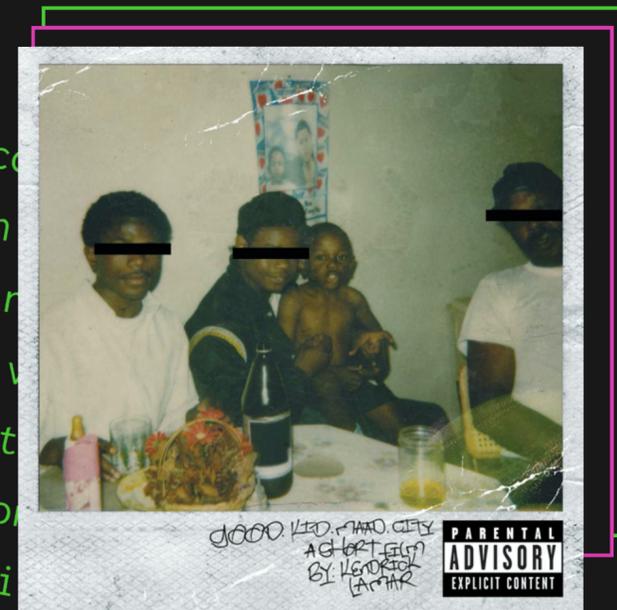


ROTY Studio

Toolset for aspiring rappers

Bomi Kim, Paul Stott

enjambment · assonance · coc
rbial phrases · alliteration
lang · meter allusion · humor
lary · realism · paradox · V
tition · apostrophe · narrat
reference · free verse · spo
ib · couplet · satire · simi
· end-stop · hyperbole · irony



Mission

Help new artists write rap by providing insights gleaned from decades of successful artists

*I told my mama I was on the come up
She said, "You going to school, I'll give you a summer"
Then she met No I.D. and gave me his number*

-Kanye West, "Made in America"

Current difficulties

Word selection and style consistency

Next line exploration

Definition of rap lyric “technicality”

Comparison to successful rappers

*That can come about, 'cause the tongue is mighty powerful
And I can name a list of your favorites that probably vouch
Maybe 'cause I'm a dreamer and sleep is the cousin of death
Really stuck in the schema of wonderin' when I'ma rest*

—Kendrick Lamar, “Sing About Me, I’m Dying of Thirst”

Who can help?

Machine-assisted writing

Style transfer and text generation using
machine learning

Gillick & Bamman (2019), Patash et al. (2015), Malmi et al. (2015)

Introducing...

ROTY Studio

(Record of the Year / Rapper of the Year)

Rap analytics

Lyric generation

*Show them how to move in a room full of vultures
Industry is shady, it needs to be taken over
Label owners hate me, I'm raising the status quo up*

-JAY Z, "Izzo (H.O.V.A.)"

Rap Analytics

Quantifying technicality

End rhyme

Internal rhyme

Assonance

Consonance

```
I'm beginning to feel like a Rap God, Rap God  
All my people from the front to the back nod, back nod  
Now who thinks their arms are long enough to slap box, slap box?  
They said I rap like a robot, so call me Rapbot
```

YOUR SCORE:

Overall : 13.54%

Alliteration : 2.7%

Assonance : 33.8%

Consonance : 24.1%

*My team supreme, stay clean
Triple beam lyrical dream, I be that*

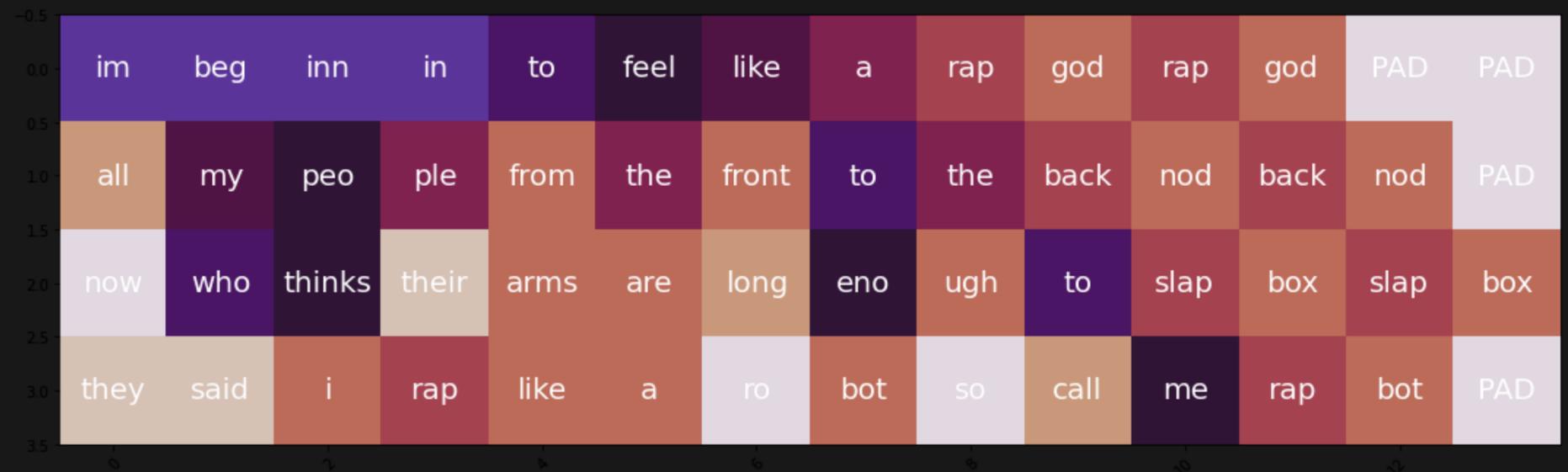
-Notorious B.I.G., "Mo' Money Mo' Problems"

Quantifying technicality

Rhyming structure

Rhyme density

I'm beginning to feel like a Rap God, Rap God
All my people from the front to the back nod, back nod
Now who thinks their arms are long enough to slap box, slap box?
They said I rap like a robot, so call me Rapbot



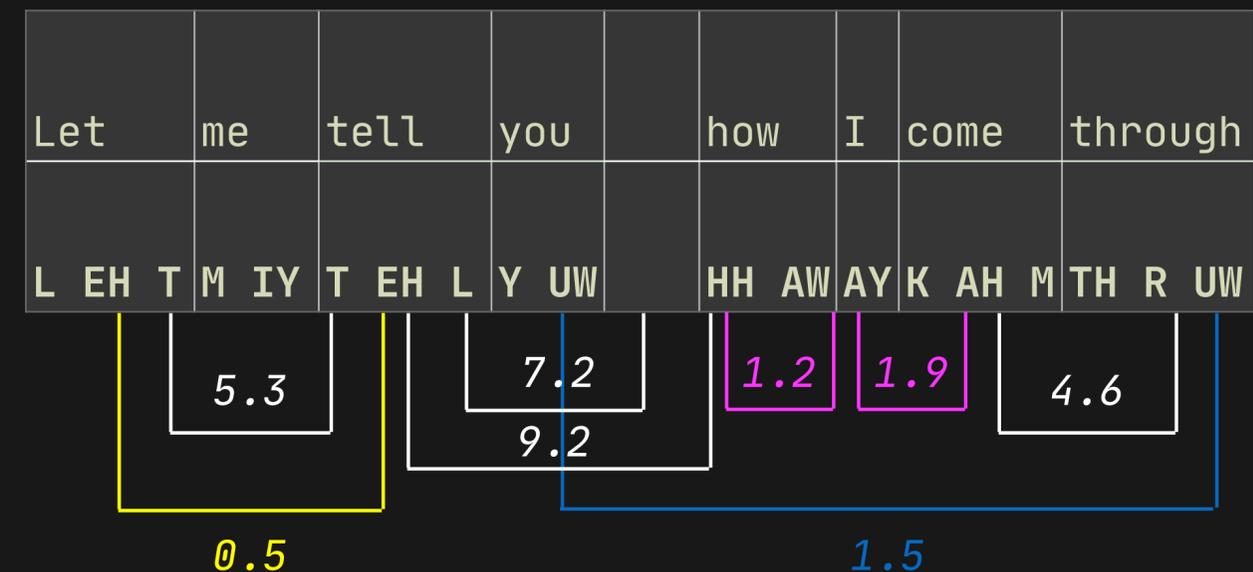
*My team supreme, stay clean
Triple beam lyrical dream, I be that*

-Notorious B.I.G., "Mo' Money Mo' Problems"

Rhyme quantification

Pair syllables and
calculate distance

Narrow scope to pairs
that are in close
proximity



*My team supreme, stay clean
Triple beam lyrical dream, I be that*

-Notorious B.I.G., "Mo' Money Mo' Problems"

Lyric Generation

Next line exploration

Given any set of lines, what is an appropriate subsequent line?

*Sometimes he rhyme quick, sometimes he rhyme slow
Or vice versa, whip up a slice of nice verse pie
Hit it on the first try, villain: the worst guy*

-MF DOOM, "All Caps"

Next line exploration

Words → phonemes (building block of poetry)

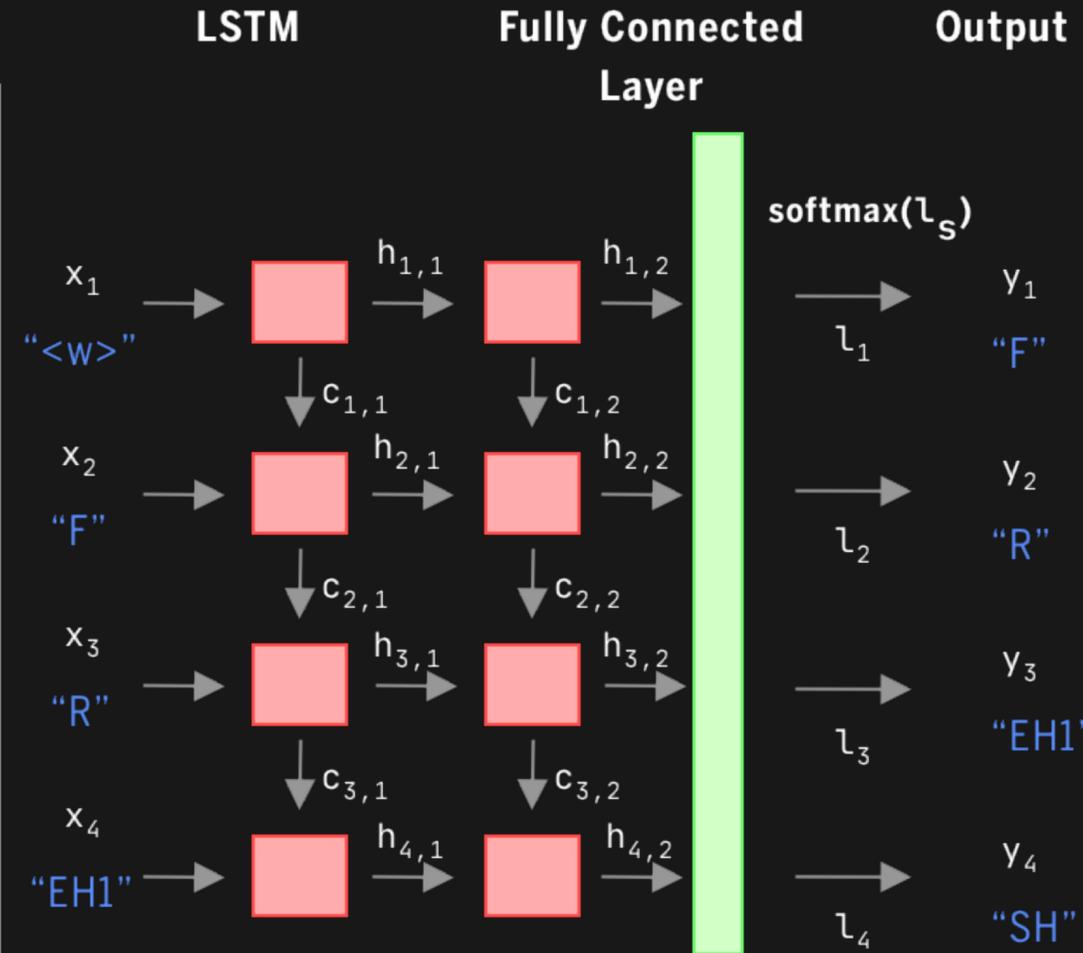
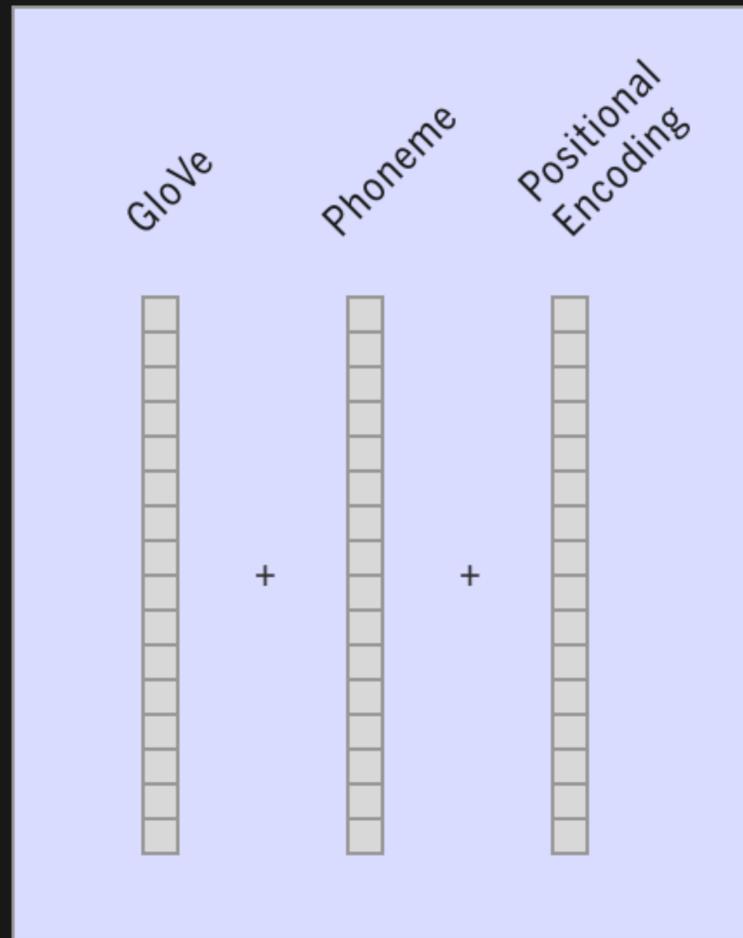
Semantic information from word embeddings

LSTM based neural net that predicts a
sequence of phonemes → words

*Sometimes he rhyme quick, sometimes he rhyme slow
Or vice versa, whip up a slice of nice verse pie
Hit it on the first try, villain: the worst guy*

-MF DOOM, "All Caps"

Phoneme Encoding



What does it look like?

Type lyrics here...

ANALYZE

SUGGEST

Where do we go from here?

Better methodology for transcribing lyrics
using audio

Improving semantics from text generation

Tools for recording and visualizations of
lyrics in musical notation

*Tried to tell you the formula but you wouldn't take it
Hard work and perseverance, they ain't related*

-Future, "Never Stop"

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