Bötley Crüe

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Goal

Take over the world. Also...

Build a bot (app) that writes it's own song.

Data: Kaggle

How it's done

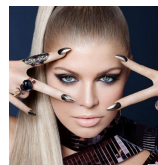- Markov Chains
- Recurrent Neural Network
  - Flask app

Markov Chain Example

Step 1. Markov Chains

- Define unigrams, bigrams, trigrams, fourgrams, etc.

Bigrams:

(get, you)
(you, love)
(love, drunk)

Step 2. Markov Chains

- Loop through text and make dictionary

example_dict = {'my: ['humps', 'lovely'],
                   'humps': ['my', 'mitochondria'],
                   'lovely': ['little_lumps', 'lady_lumps']}

Step 3. Markov Chains

- Start with fixed place word

Sentence:

My _____   _____

- Randomly chooses next string *associated* (per dictionary) with first, fixed place, word

Sentence:

My   lovely   _ _ _ _ _ _

- Lather, Rinse, Repeat Step 4 until desired end of sentence

Sentence:

My   lovely   little_lumps

Song 1. Bigrams - Baby Baby Poo

"Thrill you hate these are no one
That kind of sweet lenore next week
Erika speaking really
But you should with you with you
know
Just come out to till i just like child
Well there are together again
Loves to the baby baby poo
All by pitch penny"

Song 2. Trigrams - Ports of Call

"According to get you I'm talking to
set our minds
We live without you
Do do
Oh shit piled up
Don't you my own
Oh shit outta your doors
Grab the things that is fire on white
Whose troubles do no matter
How poetry to portsofcall"

RNN Example

RNN

- Long short-term memory recurrent neural network
  - Keras, TensorFlow
- Train neural net on existing data
- Test on a new seed
  - Word
  - Character
  - Sentence

Demo Part 1

- Eliminates long–term dependency problems

Sentence:

Whatcha gonna do with all that junk,
all that junk inside your _____.

LSTM

- Without LSTM

Sentence:

Whatcha gonna do with all that junk,
All that junk inside your mitochondria.

LSTM

- With LSTM

Sentence:

Whatcha gonna do with all that junk,
All that junk inside your trunk.

Demo Part 2

Next Steps

- Train neural net for longer
- Add rhyming
- Twitter song bot
- Finish taking over the world

Thanks!
Questions?