

Creating Poetry

Using a Recurrent Neural Network

By Karen Ouyang

September 19, 2019



Scorpion-A Haiku

Sunshiny capture

A dead, big scorpion sits

Because of the salt



“

Scorpion-A Haiku

Sunshiny capture

A dead, big scorpion sits

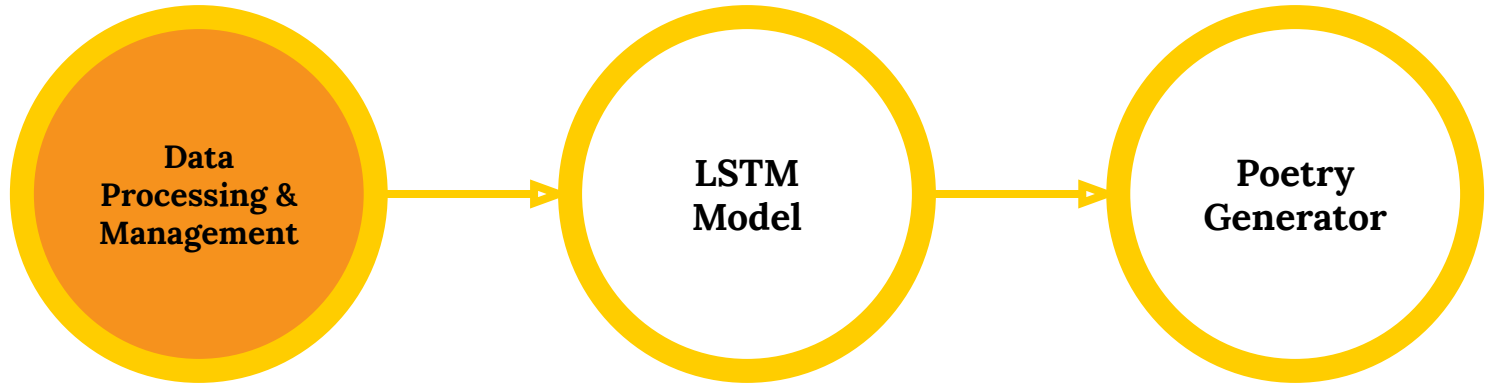
Because of the salt

poem-generator.org.uk

“



Methodology



Data Processing & Management



"Children imitating cormorants
are even more wonderful
than cormorants."

-Kobayashi Issa
(18th century)



"And all I loved, I
loved alone."

-Edgar Allan Poe
(19th century)



"Lying, thinking
Last night
How to find my soul a home"

- Maya Angelou
(20th century)



Data Processing & Management

- Scraped 21,500 poems
- Tokenized on the character level
- 60 different characters
- 7.7 million 100 characters sequence chunks created
- AWS



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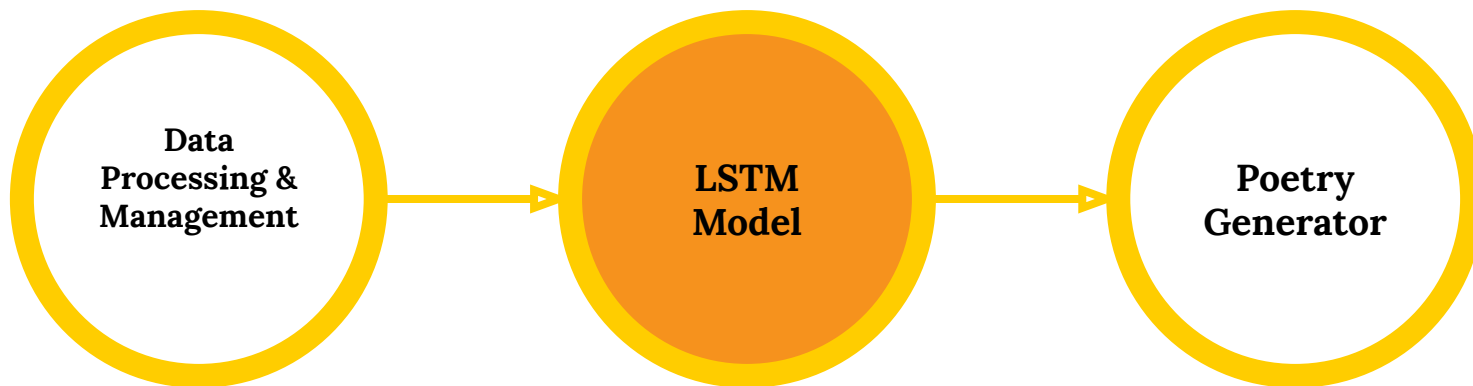


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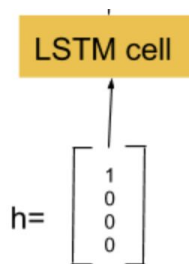


LSTM Model- RNN

$$h = \begin{bmatrix} 1 \\ 0 \\ 0 \\ 0 \end{bmatrix}$$

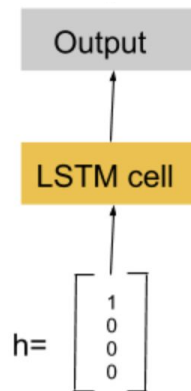


LSTM Model- RNN



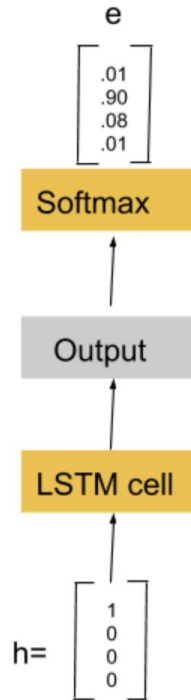


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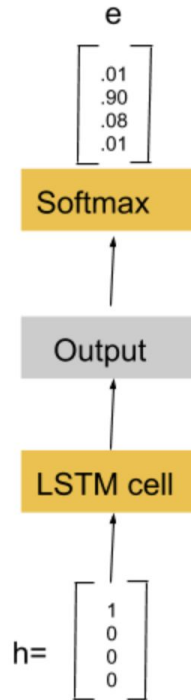


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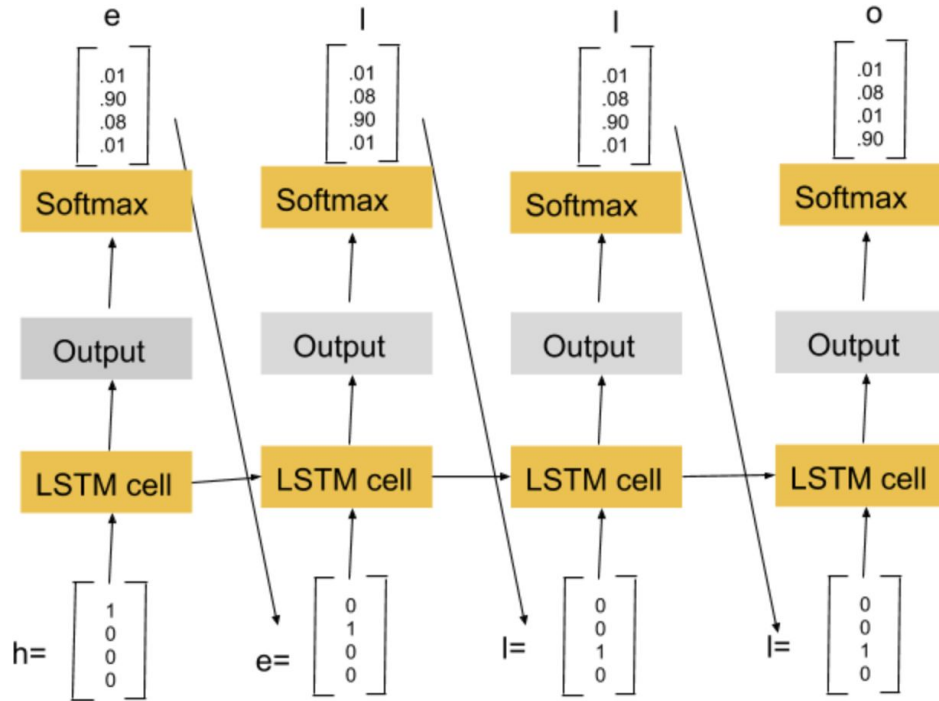


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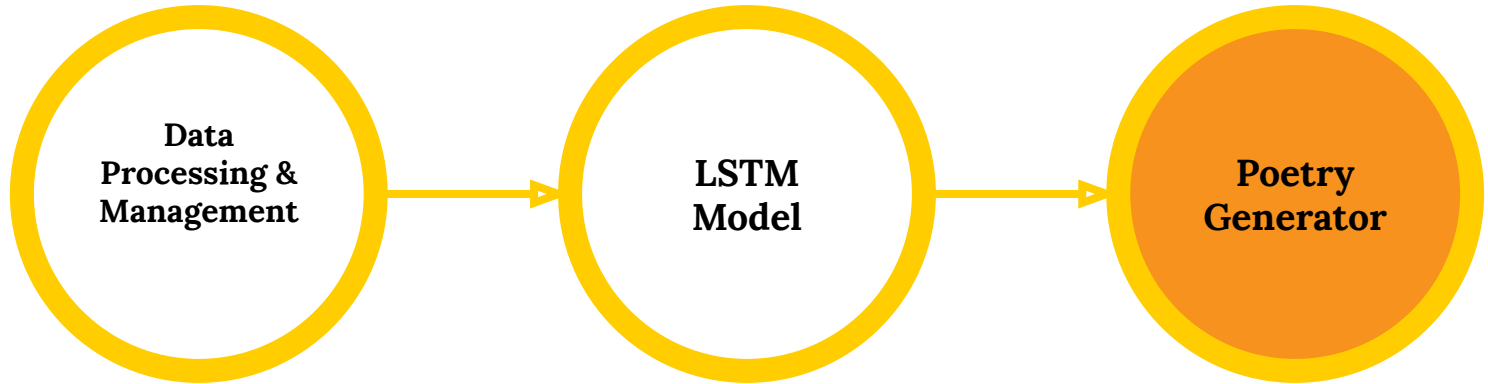


LSTM Model- RNN





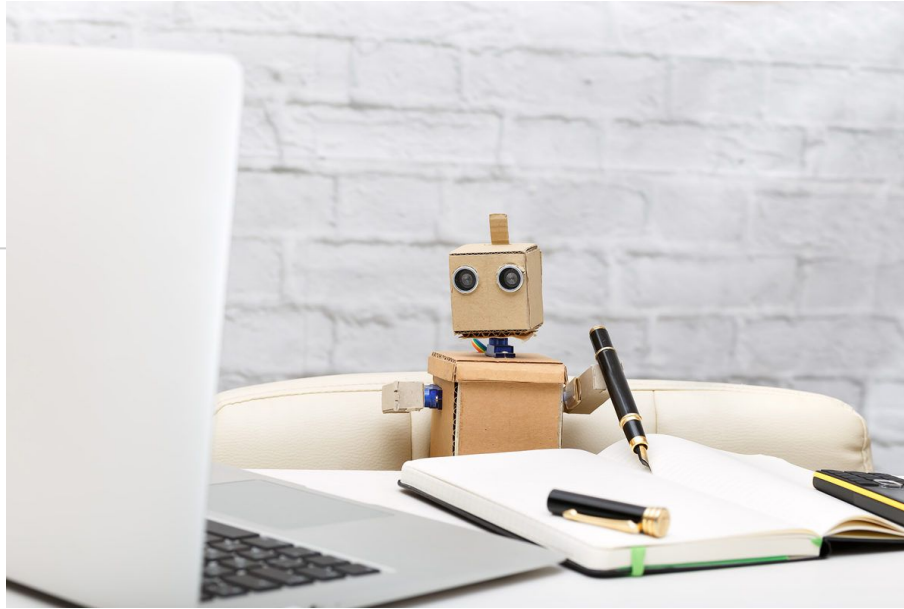
Methodology





Poetry Generator

- Seed (100+ characters)
- Temperature parameter (higher temp= higher diversity)
- 500 character continuation (can be changed)
- Character by character generation



Results



Generated Poetry (770k, .2 temperature)

Seed

“anyones hand.

i found the newborn sparrow next to the
tumbled nest on the grass. bravely

opening it”

- “Love Song” by Carol Muske-Dukes



Generated Poetry (770k, .2 temperature)

Continuation

what the sight of the great the soul to be and seased and the face
and the same work and so and the sun and the sunthe to seemed
the soul of the great of the sunder and the spare the sand and so
seemed the care all the sears and fair the same and so seasthe
more the sunder the soul and all the sunder the sun the sand the
sun and the sunder the sunder the spare and the sears and heart,
so so seems and the sunder the sound the sing words and
beauty and somethey all the same the ways of



Generated Poetry (6.1 mil, .5 temperature)

Seed

“An ode to Metis, Data science is hard, You make it easy, Modeling, math, statistics, What is there not to love”



Generated Poetry (6.1 mil, .5 temperature)

Continuation

and in the sleep the language the lights the like the more
in the streets to see and an ancer'd in the poets,
the with the sense song to the wamble the words,
as i the still the **ditch of prostance** and start actures
and the blessing for the father stand,
as the last black and so all still the stils,
and **works of readow**, the wanging had and the too to the charmore contrie,
and the strength and the pretend to me against and the grave be greater,
the world to be nothing the father to and scare,



Conclusions

- Poetic structure & common characters picked up
- No meaning, no soul
- Improvements- more data, more similar data



“Poetry is the music of the soul, and,
above all, of great and feeling souls.”

— **Voltaire**



in/karenouyang



morningkaren



karenouyang93@gmail.com