

# Final Presentation

CS 725 - Foundations of Machine Learning  
Team - Deep Poets Society

Members -

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# Aim

- Explore generative models for text
- Create a language model for poetry
- Explore techniques involved in RNNs & LSTMs

# Dataset

- A mix of large number of poems by several different authors.
- ~1400 Sonnets
  - 14 lines per poem
  - 10 syllables per line
  - Rhyming poems

*It fell as softly as the winter's snow:  
There was no sound of storm nor any stress,  
No fevered daring of Death's mightiness,  
No struggle for a strong man's overthrow:  
Just some few hours of moaning, soft and low,  
Some hard-drawn breathing, quickly hushed, ah yes!  
And then,--and then,--small white limbs  
motionless,  
While we who wait must whisper as we go.  
A face and voice we looked for lovingly  
Lost from the fellowship of our small band:  
One little ripple of Life's restless sea  
Soothed into stillness by the Master's hand,  
And missing here:--but a white soul to stand  
In the vast Temple of Eternity.*

# Techniques explored / implemented

- Training on both datasets
  - All types of poems from several authors
  - Shakespearean sonnets
- Vanilla character-RNNs
- Long Short Term Memory
- Syllable-RNNs

# Results - Corpus of all poems

*Untile you my work in a-bleeding slow*

*And wished him hear:*

*Heard listenmen subtil*

*A word will be not leave you, and the blended fashions Patria superb Mary came,*

*And other wave and nature's site of man, that stares,*

*In peace, the faculties, God he in a far.*

*"Yank age is leaves,*

*fa-scrabity,*

*Long roses-. . . .*

*O the timid poems like it to Sunset along these Or a victim.*

*it's one with lilies-channels from love*

*Here as far of Heaven and everything to them that timed every gladness and canoe!*

*'that' Enough, though thy phones have a summer's long;*

*The stars before I fail—*

*Sad breath afternoons and sullen was rocky engines that sees it should seek eyes.*

*I am Wain*

# Results - Shakespearean Sonnets

*Thy deppelely, but is, innouses trreent!--"Old  
Its ips the Mistay acly tardered cure  
Of lips from that yef time may the lood--  
Verece instepied night, smeanow bitter ser  
Wap think-plowers then dope here, and kest-tanst "Ir as can shall trine,  
And at morn throng recolse her ever and wife,  
The will not, and Whose pulse helf at 'ty even,  
In, that whoth it shall it winding sprend;  
Our living she win tearms away, while thou bless,.  
Decunnish sweet in her ard it set thee;  
The ralish's dush out with the  
Spirit him enterne propped to the pain life;  
And o'er Soon, may the onith. Lorl of wonder then  
With then some to. Lord, seems of viling swizberms.*

# Results - Vanilla RNNs

*Some courle*

*Thy depart you cannot pharmory*

*Springs;*

*Dost kissled at block dream,*

*Where a death gave all her street*

*On this pure of Green collowing the starry spaceful hand that still is music thirmulled  
his midswed his wilder sheen!*

*The for chank onsels surpwed Round's dust; how away of was once solitude.*

*Yet way he presence?*

*The self with more through haudelands was short, where it a died, thee.*

*That the dead,*

*A cily,*

*Such the passion distancing might his name look, tired in the world as a worn,  
Old you beyond*

# Results - Improvement across epochs

## 200 epochs

*And tromas that brown frost hails of aught,  
We woods learns from the gathers day-things, old breal  
And wently wither yet these surewing love  
Worn I seek light this Brights the do oncine--*

## 500 epochs

*And gone of plush of mystoor) cast that,  
With up there whose peffore a must divine deep  
Of the speen to decunlous deep least,*

## 1000 epochs

*Our living she win tearms away, while thou bless,.  
Decunnish sweet in her ard it set thee;  
The ralish's dush out with the*



Thank you