



# Using PyTorch to mimic Shakespeare: creating a recurrent neural network to emulate famous works of literature and other texts

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# Technology & Poster

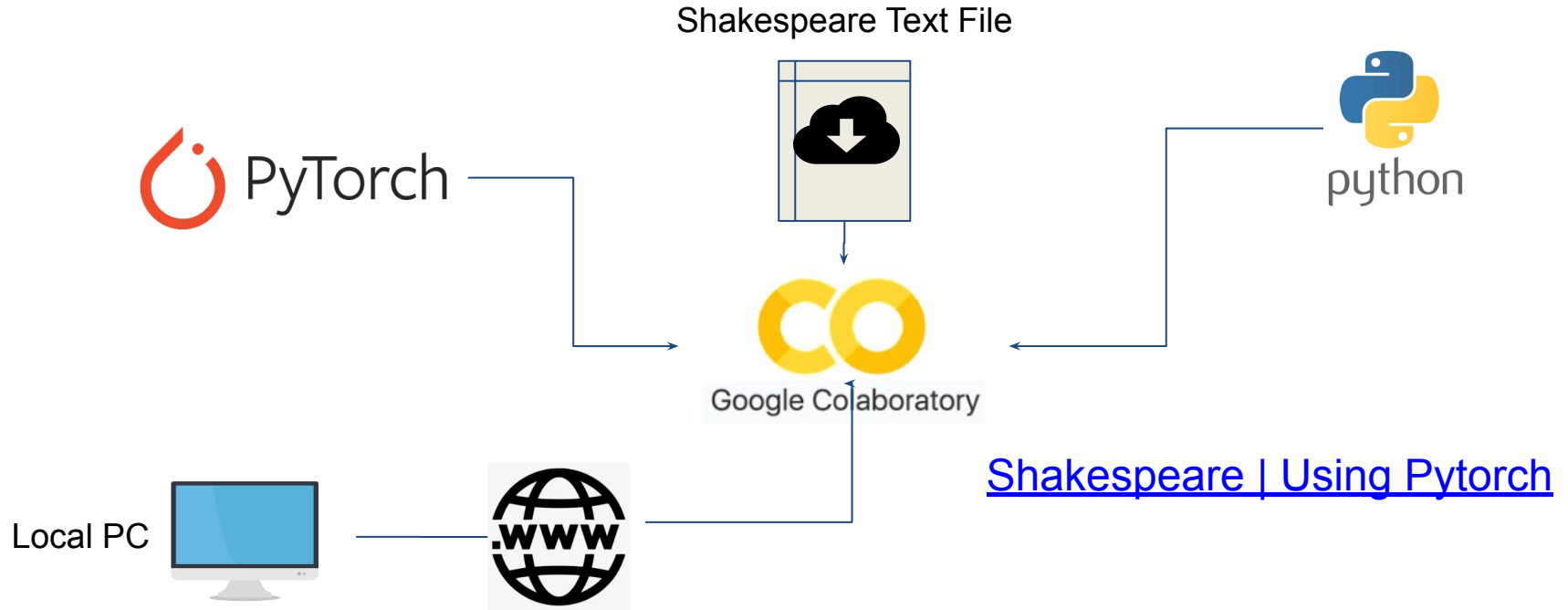
Goal: transcribe code that could emulate data from a text file

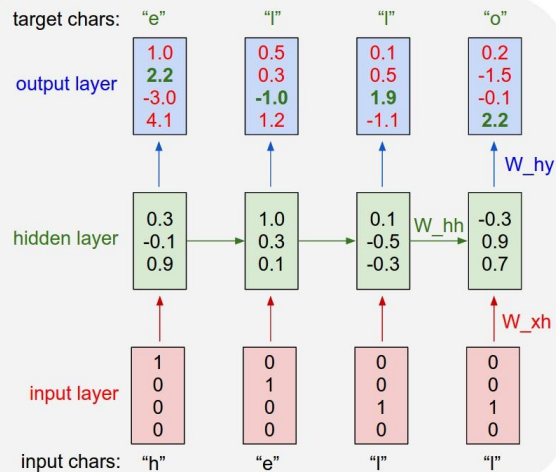
Sending original code to a PyTorch framework using Google Colab.

[Poster](#)



# Project Overview





Cell sensitive to position in line:

The sole importance of the crossing of the Berezina lies in the fact that it plainly and indubitably proved the fallacy of all the plans for cutting off the enemy's retreat and the soundness of the only possible line of action--the one Kutuzov and the general mass of the army demanded--namely, simply to follow the enemy up. The French crowd fled at a continually increasing speed and all its energy was directed to reaching its goal. It fled like a wounded animal and it was impossible to block its path. This was shown not so much by the arrangements it made for crossing as by what took place at the bridges. When the bridges broke down, unarmed soldiers, people from Moscow and women with children who were with the French transport, all--carried on by vis inertiae--pressed forward into boats and into the ice-covered water and did not, surrender.

Cell that turns on inside quotes:

"You mean to imply that I have nothing to eat out of.... On the contrary, I can supply you with everything even if you want to give dinner parties," warmly replied Chichagov, who tried by every word he spoke to prove his own rectitude and therefore imagined Kutuzov to be animated by the same desire.

Kutuzov, shrugging his shoulders, replied with his subtle penetrating smile: "I meant merely to say what I said."

tyntd-iafhatawiaoihrdemot lytdws e ,tfti, astai f ogoh eoase rrranbyne 'nhthnee e  
plia tkIrgd t o idoe ns,smtt h ne etie h,hregtrs nigtkie,aoaenns lng

Aftair fall unsuch that the hall for Prince Velzonski's that me of  
her hearly, and behs to so arwage fiving were to it beloge, pavu say falling misfort  
how, and Gogition is so overelical and offer.

"Why do what that day," replied Natasha, and wishing to himself the fact the  
princess, Princess Mary was easier, fed in had oftened him.  
Pierre aking his soul came to the packs and drove up his father-in-law women.

Karpathy 100 Iteration

Karpathy 700 Iteration

Karpathy 2000 Iteration



<http://www.ynetnews.com/> English-language website of Israel's largest newspaper, the Ynet. The Ynet is a leading Israeli news website, providing news, analysis, and commentary on Israeli and international events. It is one of the most popular news sources in Israel, with a large readership and a significant presence on social media. The Ynet is known for its comprehensive coverage of Israeli news, including politics, economics, and culture. It also provides a platform for user-generated content, allowing readers to share their own views and experiences. The Ynet is a valuable resource for anyone interested in understanding the complexities of Israeli society and the Middle East.

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# Outputs and Results

iter 1212200, loss: 42.82566255293282

Output: [1, 56, 39, 28, 32, 39, 12, 56, 1, 39, 36, 50, 8, 24, 1, 17, 39, 56, 50, 54, 1, 39, 4, 8, 20, 39, 56, 1, 39, 17, 8, 26, 44, 44, 23, 55, 27, 43, 41, 19, 21, 22, 44, 11, 4, 39, 60, 20, 25, 25, 25, 4, 53, 44, 6, 34, 25, 8, 20, 34, 25, 1, 7, 12, 39, 8, 32, 1, 39, 5, 25, 1, 50, 12, 56, 39, 56, 1, 24, 12, 46, 39, 58, 8, 12, 24, 1, 58, 39, 12, 56, 1, 39, 12, 8, 24, 3, 1, 58, 39, 1, 12, 56, 50, 12, 39, 48, 8, 24, 58, 39, 50, 39, 5, 24, 1, 8, 25, 17, 12, 39, 32, 8, 39, 3, 28, 17, 9, 50, 28, 58, 39, 57, 1, 50, 25, 17, 39, 17, 8, 32, 1, 39, 50, 9, 8, 20, 12, 39, 50, 5, 8, 8, 25, 58, 26, 44, 44, 40, 52, 38, 43, 52, 2, 0, 22, 44, 30, 50, 25, 12, 56, 1, 24, 46, 39, 4, 8, 20, 46, 39, 48, 50, 17, 12, 1, 24, 39, 12, 56, 28, 17, 39, 17, 1, 34, 50, 32, 36, 1]

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MESTARD:

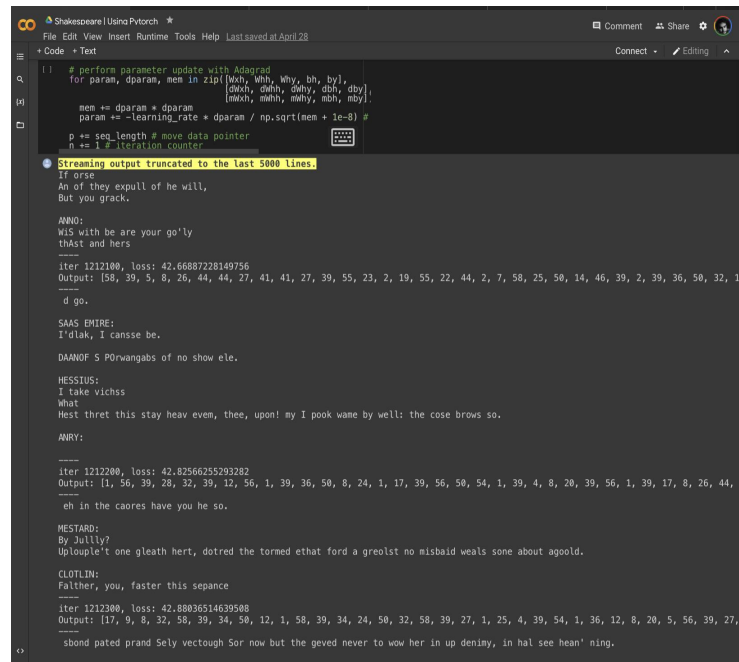
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CLOTLIN:

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# perform parameter update with Adagrad
for param, dparam, mem in zip([wxb, whb, why, bh, by],
                               [dwxb, dwhb, dwhy, dbh, dby],
                               [wxb, whb, why, bh, by]):
    mem += dparam * dparam
    param -= learning_rate * dparam / np.sqrt(mem + 1e-8) # div by sqrt

p = seq_length # move data pointer
n = 1 # iteration counter

Streaming output truncated to the last 5000 lines.

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ANNO:
W33 with be are your go'ly
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iter 1212100, loss: 42.66887228149756
Output: [50, 39, 5, 8, 26, 44, 44, 27, 41, 41, 27, 39, 55, 23, 2, 19, 55, 22, 44, 2, 7, 58, 25, 50, 14, 46, 39, 2, 39, 36, 50, 32, 1,
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iter 1212200, loss: 42.82566255293282
Output: [1, 56, 39, 28, 32, 39, 12, 56, 1, 39, 36, 50, 8, 24, 1, 17, 39, 56, 50, 54, 1, 39, 4, 8, 20, 39, 56, 1, 39, 17, 8, 26, 44,
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MESTARD:
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CLOTLIN:
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iter 1212300, loss: 42.88036514639588
Output: [17, 9, 8, 32, 58, 39, 34, 50, 12, 1, 58, 39, 34, 24, 50, 32, 58, 39, 27, 1, 25, 4, 39, 54, 1, 36, 12, 8, 20, 5, 56, 39, 27,
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# Challenges and Problems Faced

- Understanding Python syntax and PyTorch functions
  - Build multiple simple projects, use projects to learn
- Understanding concepts
  - Cross-entropy, loss function, backpropagation
- Debugging Code
  - Mimicking the mathematical operations and algorithms.