

Vocab & hyperparameters

- words \leftarrow list of words.
- stoi + itos.
- Build dataset
 - block_size = 3 (3 char to predict 4th char)
 - $X = [] \leftarrow$ I/P to NN
 - $Y = [] \leftarrow$ labels
 - First 5 words \leftarrow 32 context examples

I/P labels -
 X : shape $\rightarrow [32, 3]$ [$\#$ examples, block-size].
 Y : shape $\rightarrow [32]$.

NN - takes X as I/P & predicts Y

- Embedding lookup table - C
- 27 possible characters in a 2 Dimensional space
- $C = [[27, 2]]$ - initialized randomly to begin.
↳ each of the 27 characters will have a 2 Dimensional embedding
- Embed all integers in I/P X
- Example to embed 5th starts simple $\Rightarrow C[5] = 1 \times 2$
- Now to embed $[32, 3]$ integers stored in X , using look up table $C \Rightarrow C[X] = [32 \times 3 \times 2]$
- each of the characters in X is converted to a 2D embedding per mapping \rightarrow in C

One-hot encoding of char = $[1 \times 27] \rightarrow [1, 2]$
dot-mul with $C[27, 2]$

~~$[27, 3] \times [27, 2] \Rightarrow [27, 2]$~~ $C[X]$ is our embedding
 ~~$[32, 3] \times [27, 2] \Rightarrow [32, 2]$~~