EAI6010 - Module 3

Text Classification with Transfer Learning

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Text Classification with Transfer Learning

Dataset used are from stack overflow dataset.

Trained the dataset using language model learner to find optimal learning rate as shown in Figure 1 below.
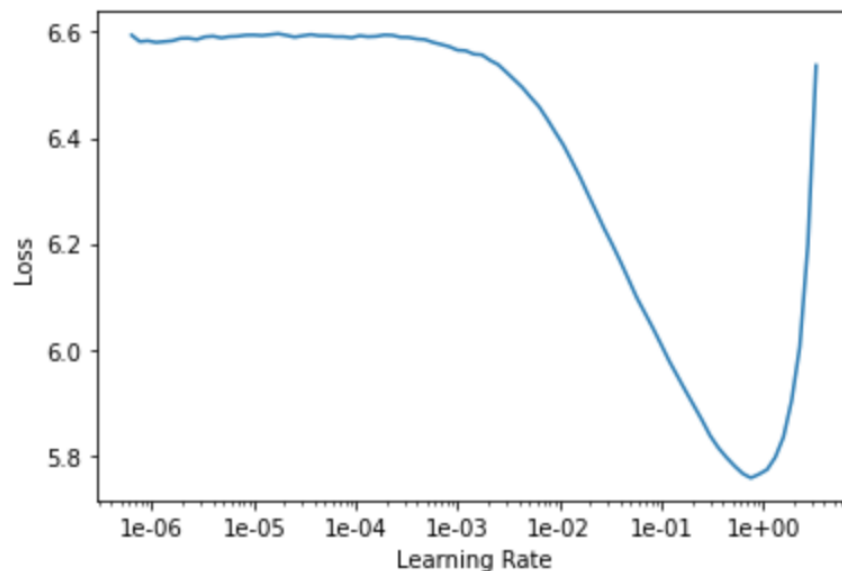

Figure 1: Optimal learning rate plot

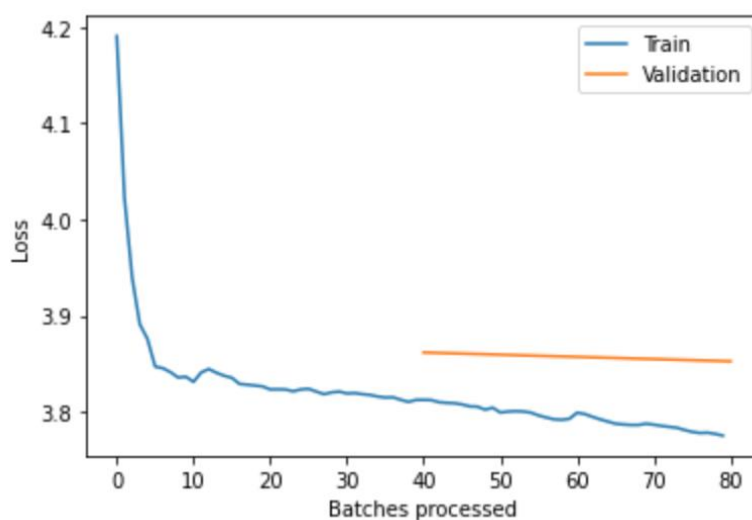The best accuracy with this model was 33.5%.

Figure 2: Recorded loss for the model

Trained the classifier using text classifier learner. After fine-tuning the best accuracy of the classifier was 83.5%.

The confusion matrix for the model is as below.

Confusion matrix

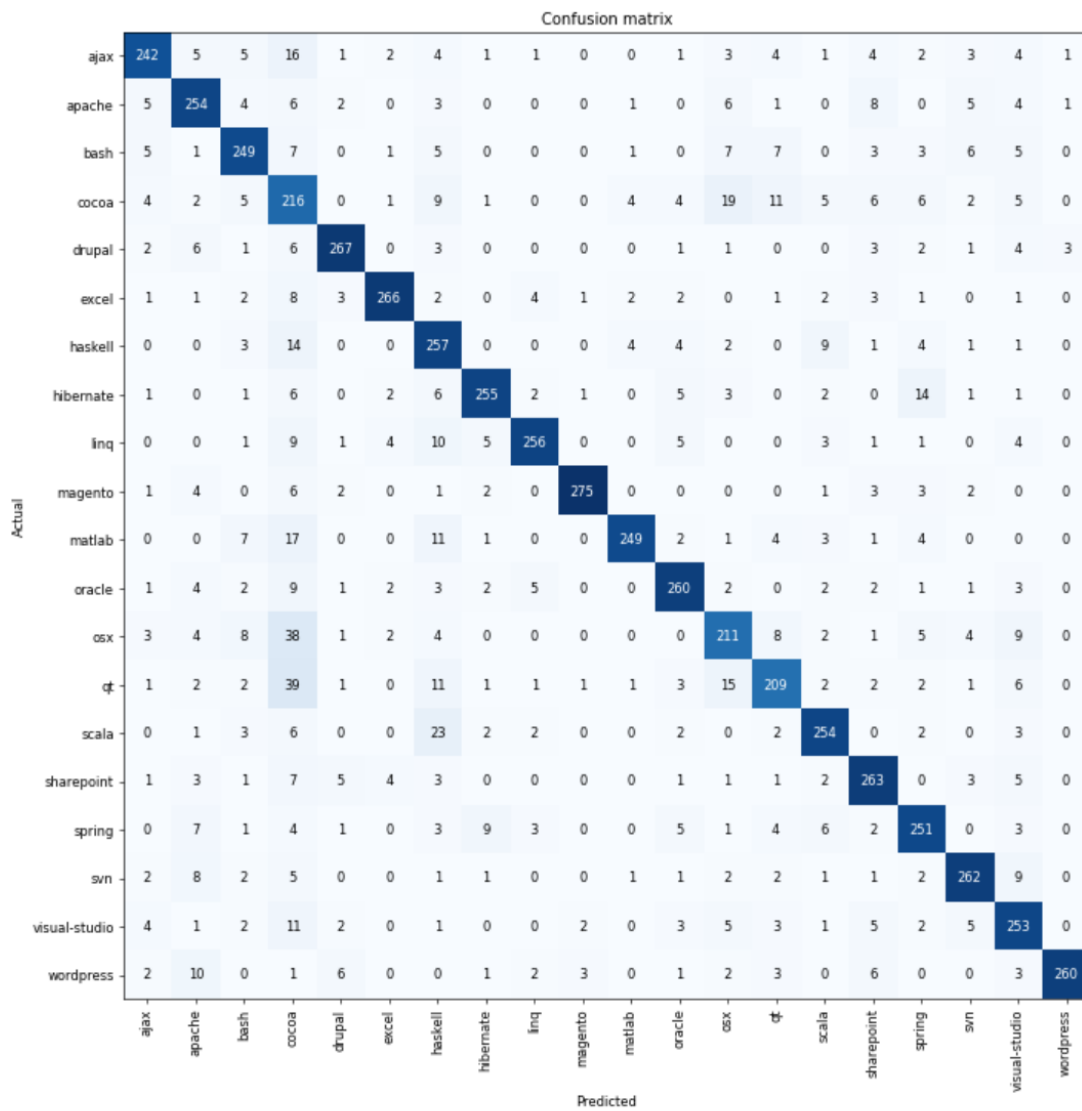| Actual \ Predicted	ajax	apache	bash	cocoa	drupal	excel	haskell	hibernate	linq	magento	matlab	oracle	osx	qt	scala	sharepoint	spring	svn	visual-studio	wordpress
ajax	242	5	5	16	1	2	4	1	1	0	0	1	3	4	1	4	2	3	4	1
apache	5	254	4	6	2	0	3	0	0	0	1	0	6	1	0	8	0	5	4	1
bash	5	1	249	7	0	1	5	0	0	0	1	0	7	7	0	3	3	6	5	0
cocoa	4	2	5	216	0	1	9	1	0	0	4	4	19	11	5	6	6	2	5	0
drupal	2	6	1	6	267	0	3	0	0	0	0	1	1	0	0	3	2	1	4	3
excel	1	1	2	8	3	266	2	0	4	1	2	2	0	1	2	3	1	0	1	0
haskell	0	0	3	14	0	0	257	0	0	0	4	4	2	0	9	1	4	1	1	0
hibernate	1	0	1	6	0	2	6	255	2	1	0	5	3	0	2	0	14	1	1	0
linq	0	0	1	9	1	4	10	5	256	0	0	5	0	0	3	1	1	0	4	0
magento	1	4	0	6	2	0	1	2	0	275	0	0	0	0	1	3	3	2	0	0
matlab	0	0	7	17	0	0	11	1	0	0	249	2	1	4	3	1	4	0	0	0
oracle	1	4	2	9	1	2	3	2	5	0	0	260	2	0	2	2	1	1	3	0
osx	3	4	8	38	1	2	4	0	0	0	0	0	211	8	2	1	5	4	9	0
qt	1	2	2	39	1	0	11	1	1	1	1	3	15	209	2	2	2	1	6	0
scala	0	1	3	6	0	0	23	2	2	0	0	2	0	2	254	0	2	0	3	0
sharepoint	1	3	1	7	5	4	3	0	0	0	0	1	1	1	2	263	0	3	5	0
spring	0	7	1	4	1	0	3	9	3	0	0	5	1	4	6	2	251	0	3	0
svn	2	8	2	5	0	0	1	1	0	0	1	1	2	2	1	1	2	262	9	0
visual-studio	4	1	2	11	2	0	1	0	0	2	0	3	5	3	1	5	2	5	253	0
wordpress	2	10	0	1	6	0	0	1	2	3	0	1	2	3	0	6	0	0	3	260

Figure 3: Confusion matrix for the classifier model.

The model was extracted and stored back to the google drive.