MOVIES GENRE PREDICTOR

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「Data Acquisition」—Kaggle & TMDB

A	B	C	D	
adult	belongs_to_collect	budget	genres	h
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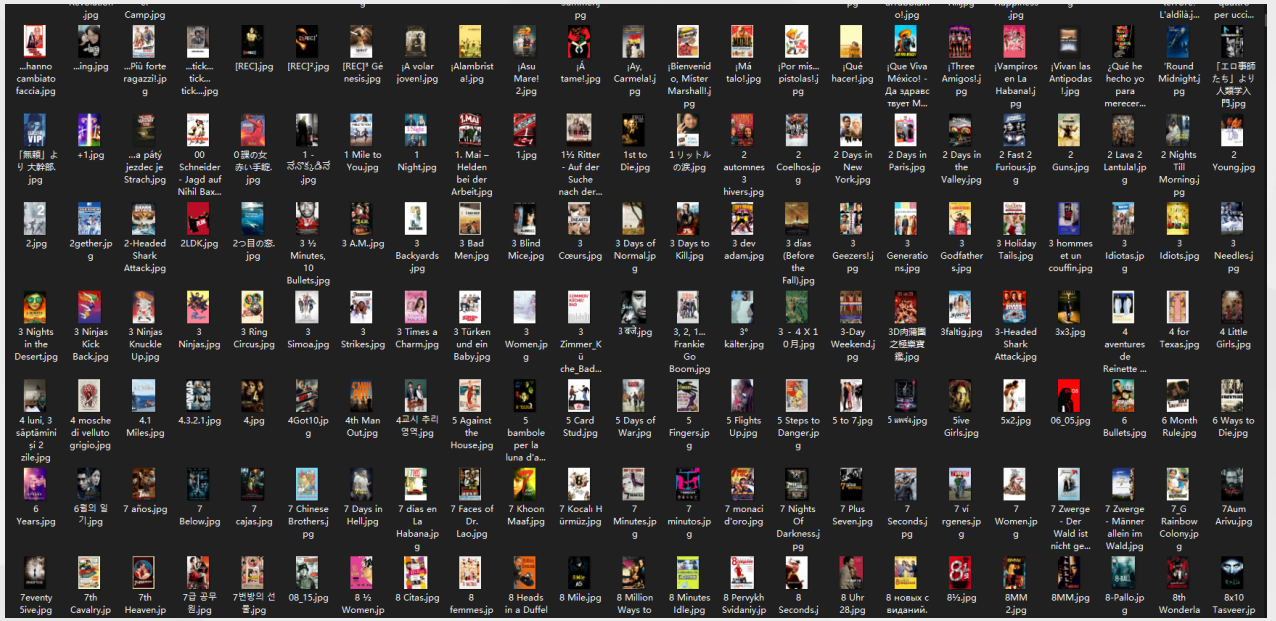


Record: 45k Posters: 37k

Sure, not all are valid.

No poster matched?

Clean!

Poster null?

Clean!

Grayscale image?

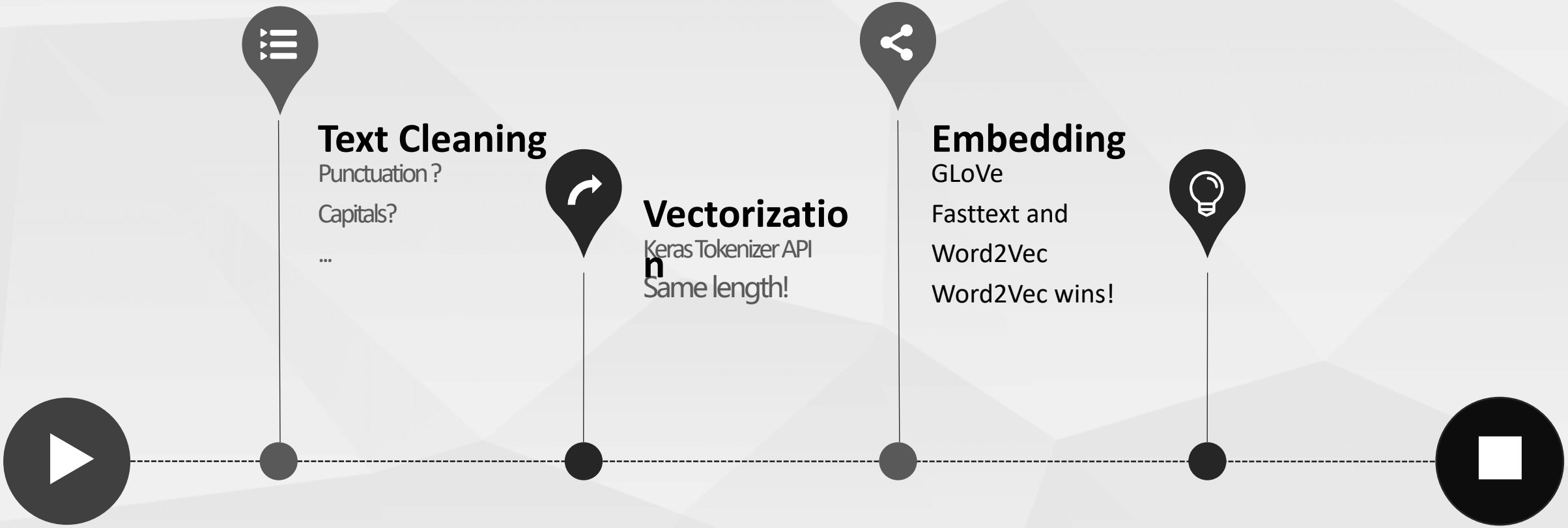
convert!

Left : 33k

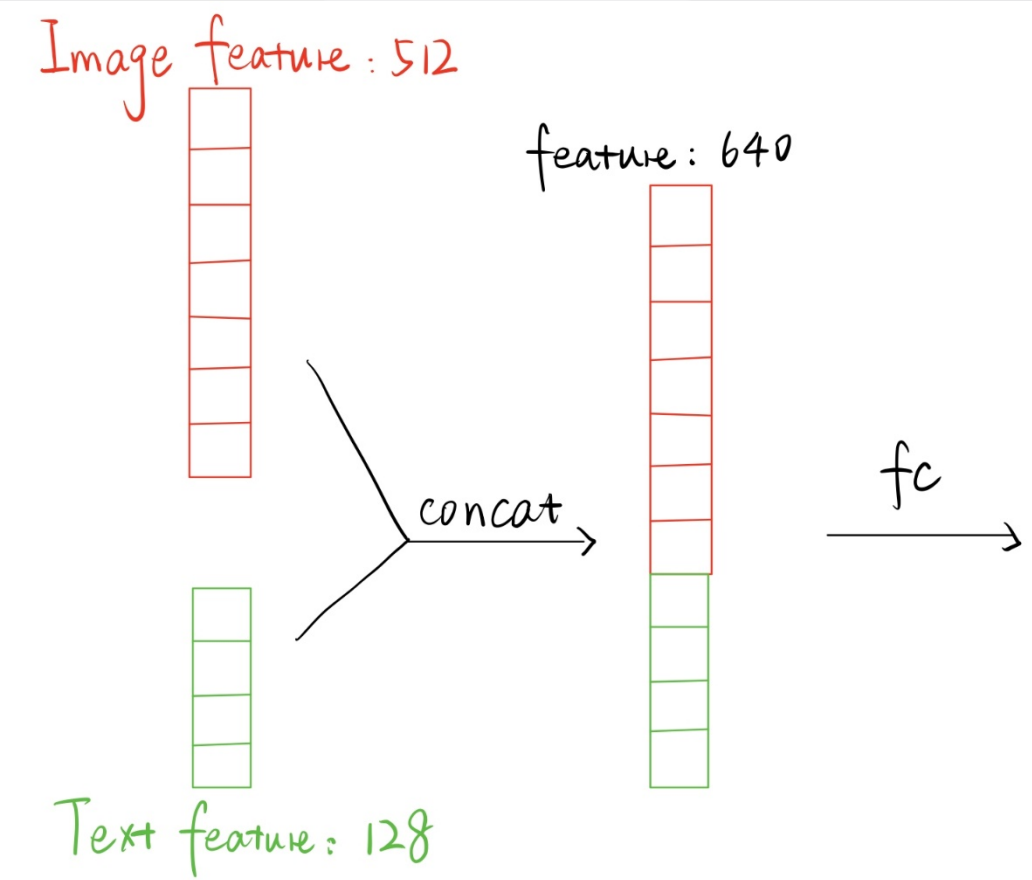
Now they have more common ground~

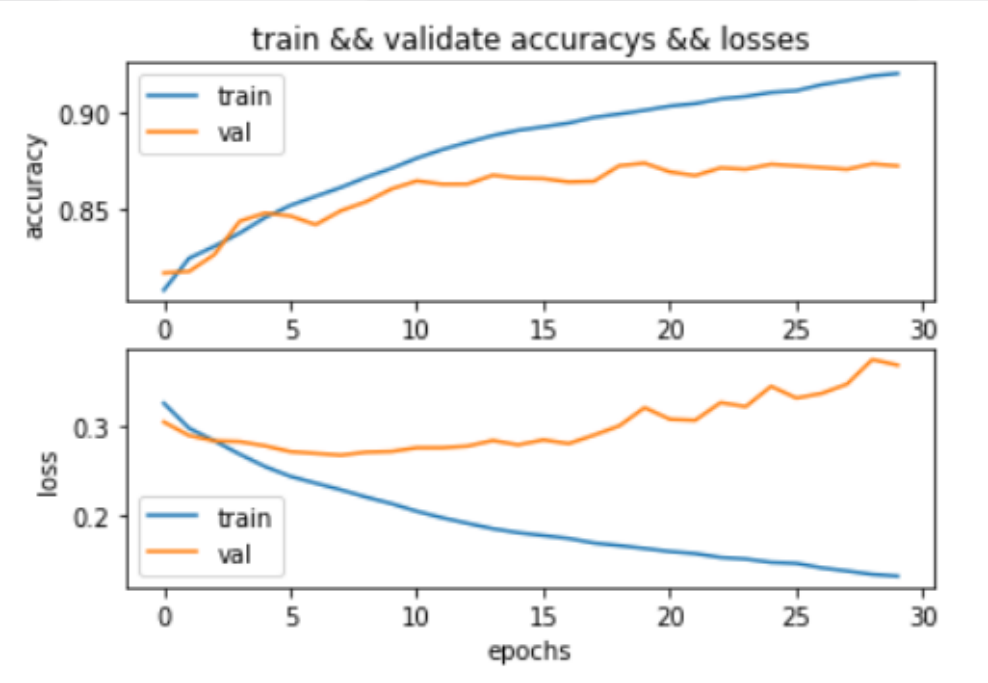
”

「Preprocessing」: data cleaning



「Processing」: original method



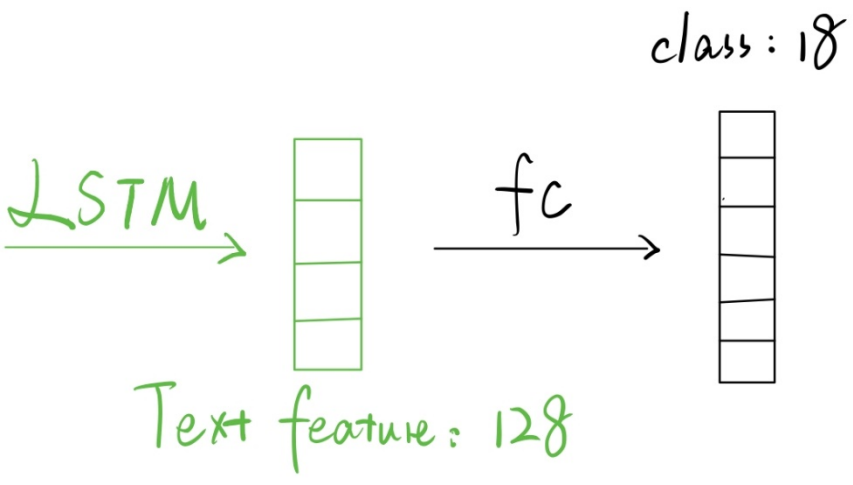


Epoch 20 , Val_acc : 0.877

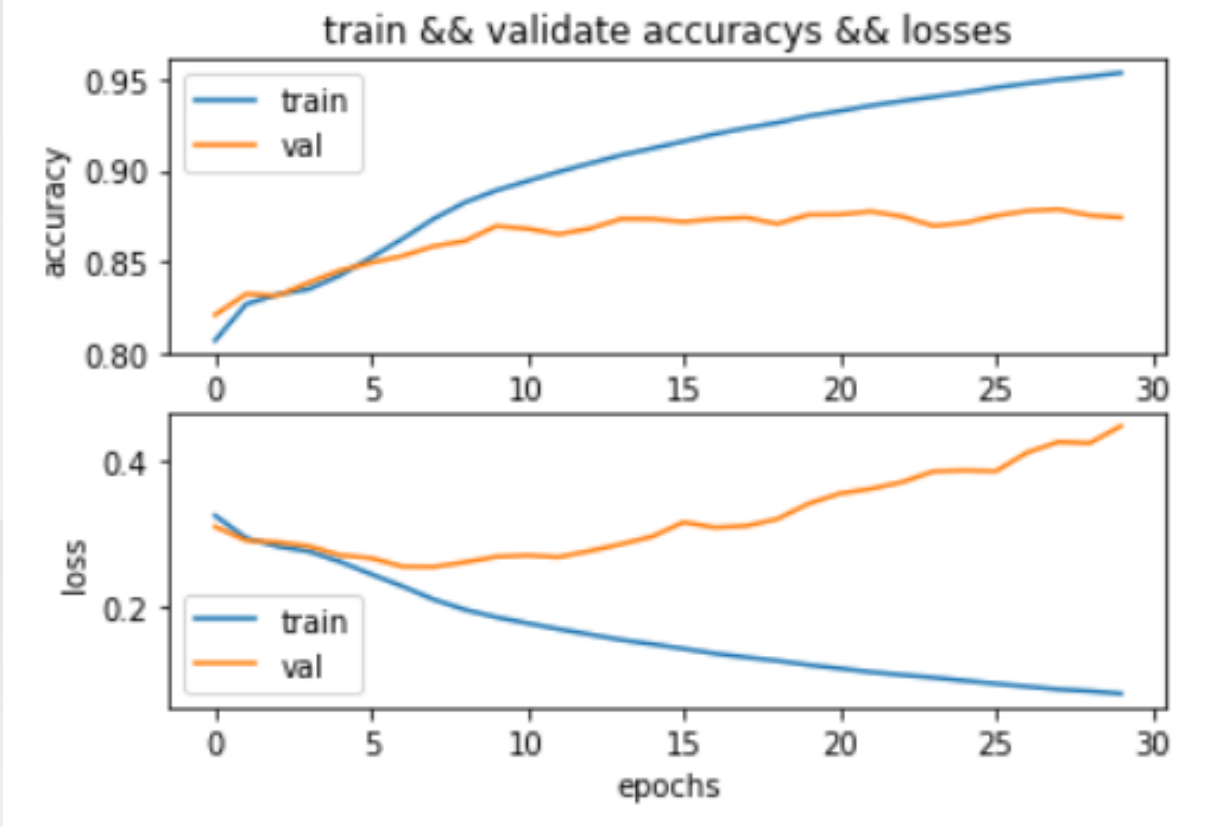
Model	Test acc	Test loss	AUC score
CNN_LSTM	0.8728	0.3234	0.8062

Will single modal be better?

「First Try」Separation.

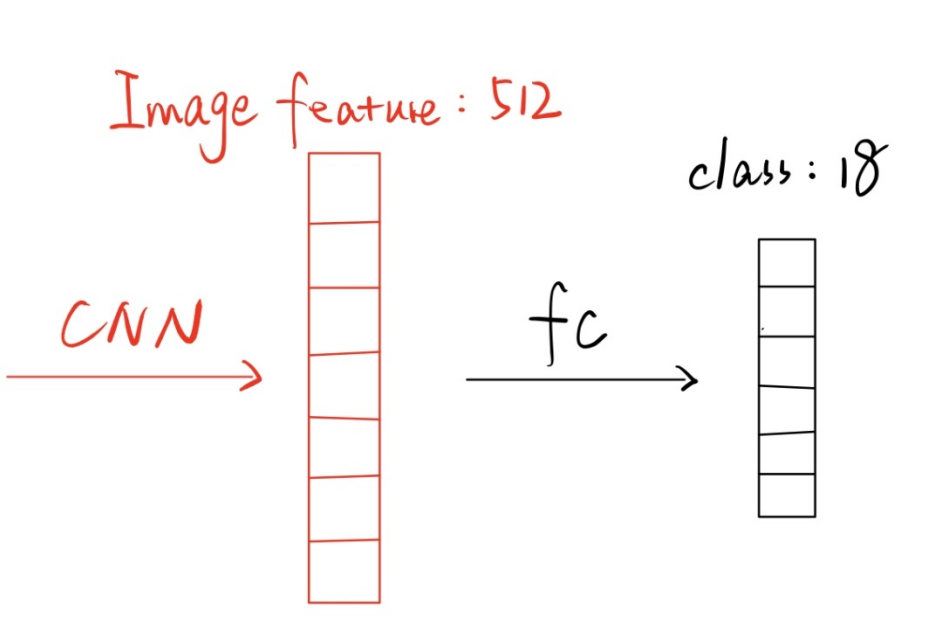


Model	Test acc	Test loss	AUC score
LSTM	0.8715	0.3199	0.8173

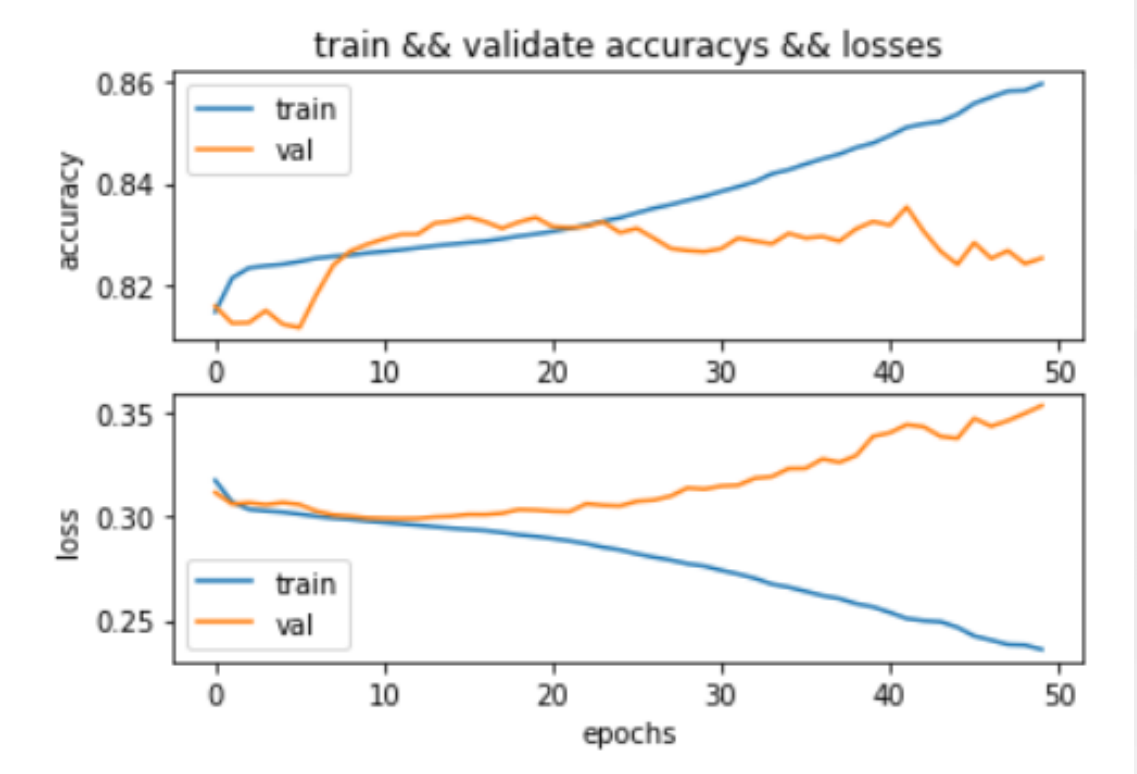


Epoch 15， Val_acc： 0.8734

「First Try」Separation.



Model	Test acc	Test loss	AUC score
CNN	0.8328	0.3048	0.6341



Epoch 20， Val_acc： 0.8297

CNN Network too shallow?

CNN

Resnet18 model fine-tune

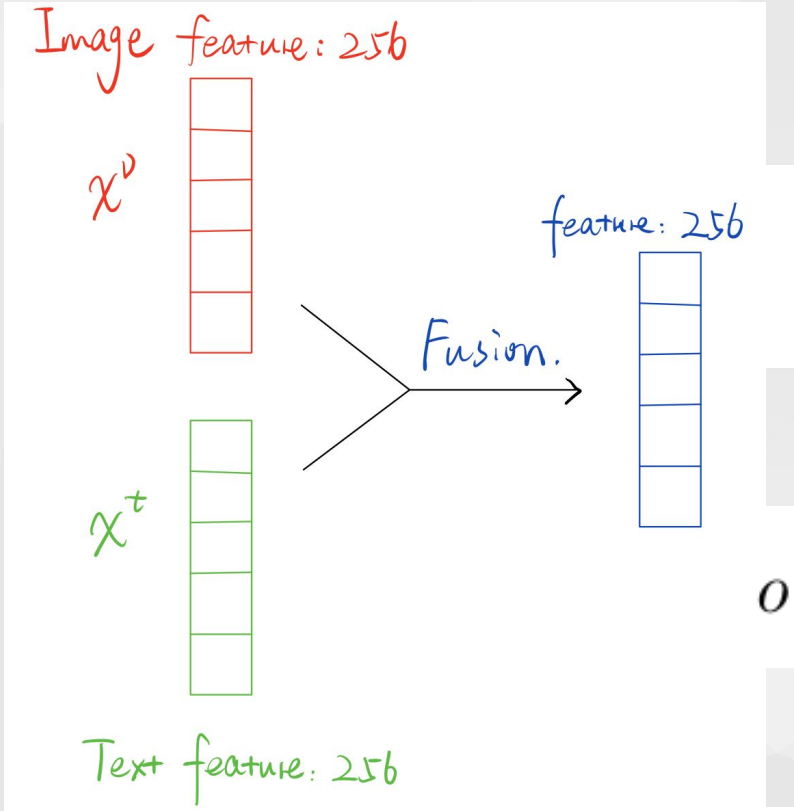
(pretrained on ImageNet)

Optical : 83%

Do we have a better way to make use of the information instead of concatenation?

「Third Try」 Other merging method.

$$o(x_n) = W(Ux_n^t + Vx_n^v).$$



Val_acc : 0.8791

$$o(x_n) = W(Ux_n^t * Vx_n^v),$$

Val_acc : 0.8803

$$o(x_n) = W\max(Ux_n^t, Vx_n^v).$$

Val_acc : 0.8788

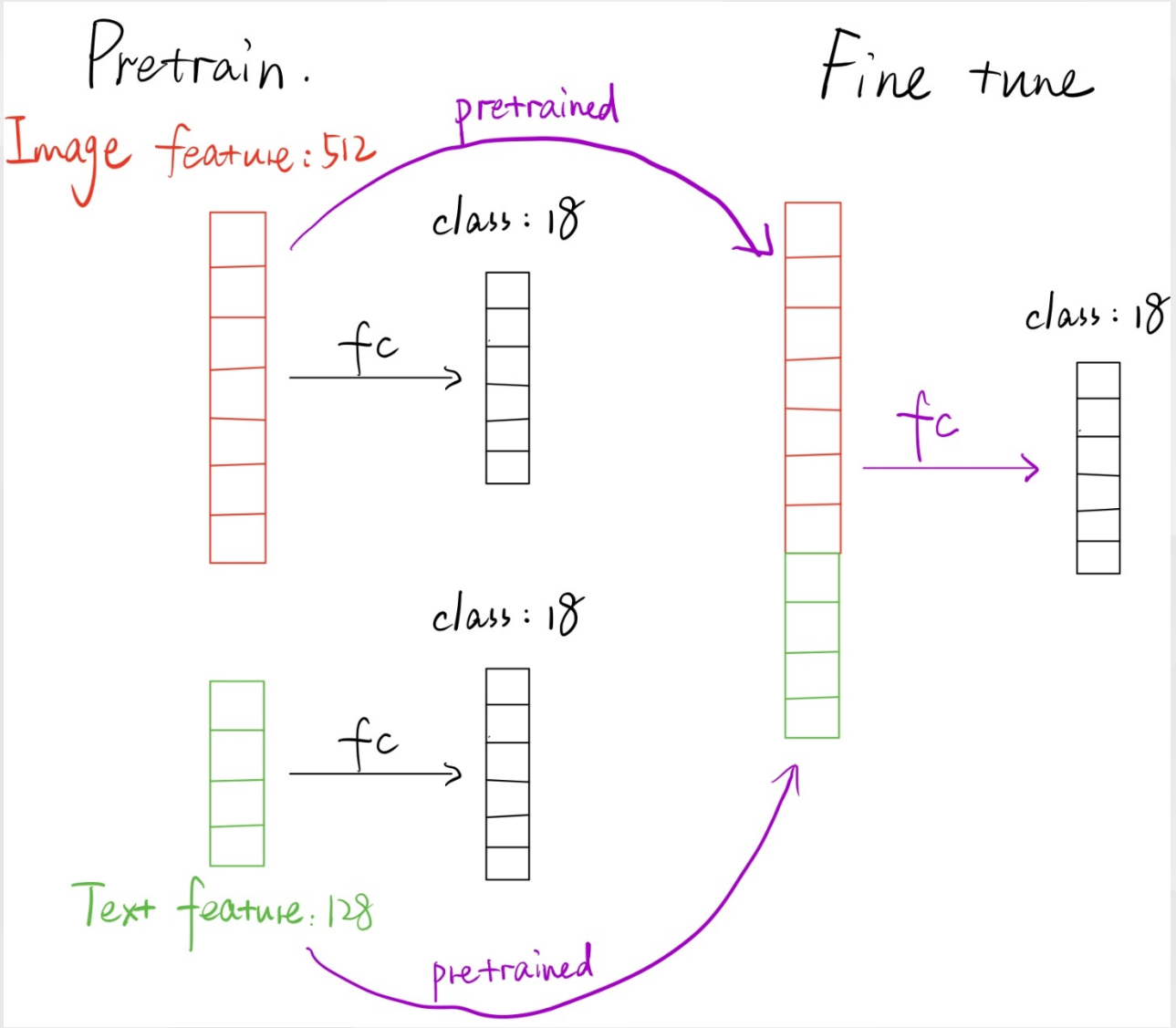
$$o(x_n) = W(\sigma(Ux_n^t) * Vx_n^v),$$

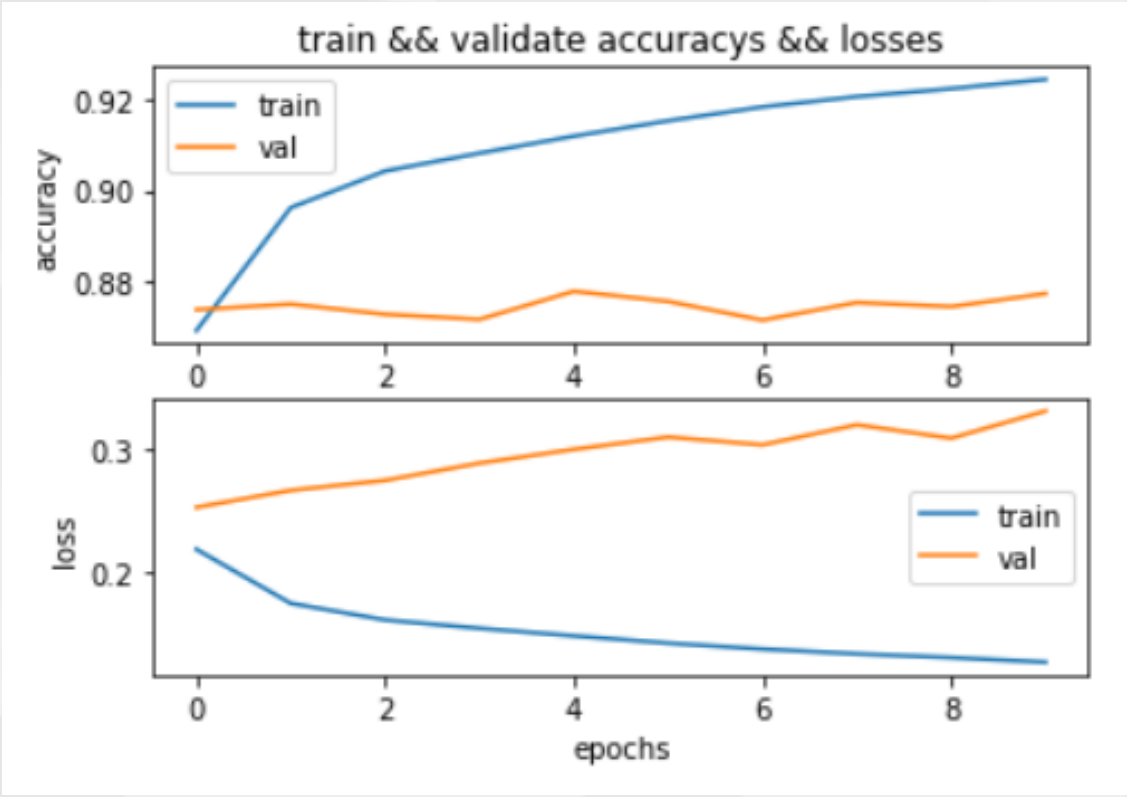
Val_acc : 0.8295

Model	Test acc	Test loss	AUC score
add_fusion	0.8762	0.3470	0.8122
dot_fusion	0.8765	0.4150	0.7921
max_fusion	0.8767	0.3366	0.8039
sigmoid_fusion	0.8292	0.3050	0.611

Can we train it faster?

「Fourth try」 Frozen!





Model	Test acc	Test loss	AUC score
finetuned	0.8751	0.3122	0.8165
finetuned frozen	0.8755	0.311	0.822

Model	Test acc	Test loss	AUC score
CNN_LSTM (baseline)	0.8728	0.3234	0.8062
CNN	0.8328	0.3048	0.6341
LSTM	0.8715	0.3199	0.8173
add_fusion	0.8762	0.3470	0.8122
dot_fusion	0.8765	0.4150	0.7921
max_fusion	**0.8767**	0.3366	0.8039
sigmoid_fusion	0.8292	0.3050	0.611
finetuned	0.8751	0.3122	0.8165
finetuned frozen	0.8755	0.311	**0.822**

Thank you !