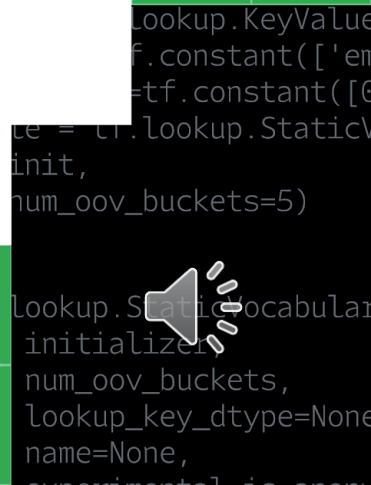
Google Developer Student Clubs

Mini Project Week01

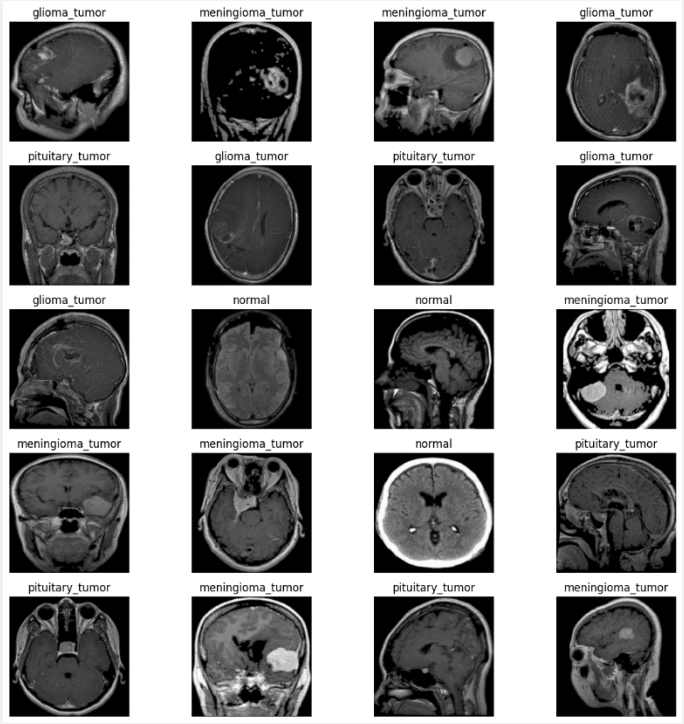
Basic 1조

서지현



Code Review

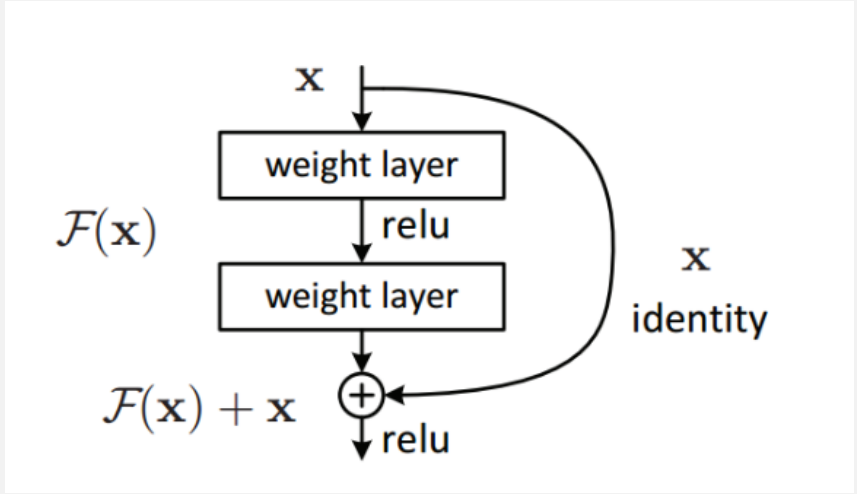
Goal



1. Glioma Tumor
2. Meningioma Tumor
3. Normal
4. Pituitary Tumor

ResNet50 Model

```
Model: "model"
_________________________________________________________________
 Layer (type)                Output Shape              Param #
=================================================================
 input_layer (InputLayer)    [(None, 224, 224, 3)]     0

 resnet50 (Functional)       (None, None, None, 2048   23587712
                             )

 global_average_pooling_lay  (None, 2048)              0
 er (GlobalAveragePooling2D
 )

 flatten (Flatten)           (None, 2048)              0

 dense (Dense)               (None, 512)               1049088

 dropout (Dropout)           (None, 512)               0

 output_layer (Dense)        (None, 4)                 2052

=================================================================
Total params: 24638852 (93.99 MB)
Trainable params: 1051140 (4.01 MB)
Non-trainable params: 23587712 (89.98 MB)
_________________________________________________________________
```



평가 지표

	precision	recall	f1-score	support
0	0.96	0.86	0.91	184
1	0.83	0.92	0.87	179
2	0.96	0.98	0.97	81
3	0.94	0.94	0.94	175
accuracy			0.91	619
macro avg	0.92	0.92	0.92	619
weighted avg	0.92	0.91	0.91	619

$$(Recall) = \frac{TP}{TP + FN}$$

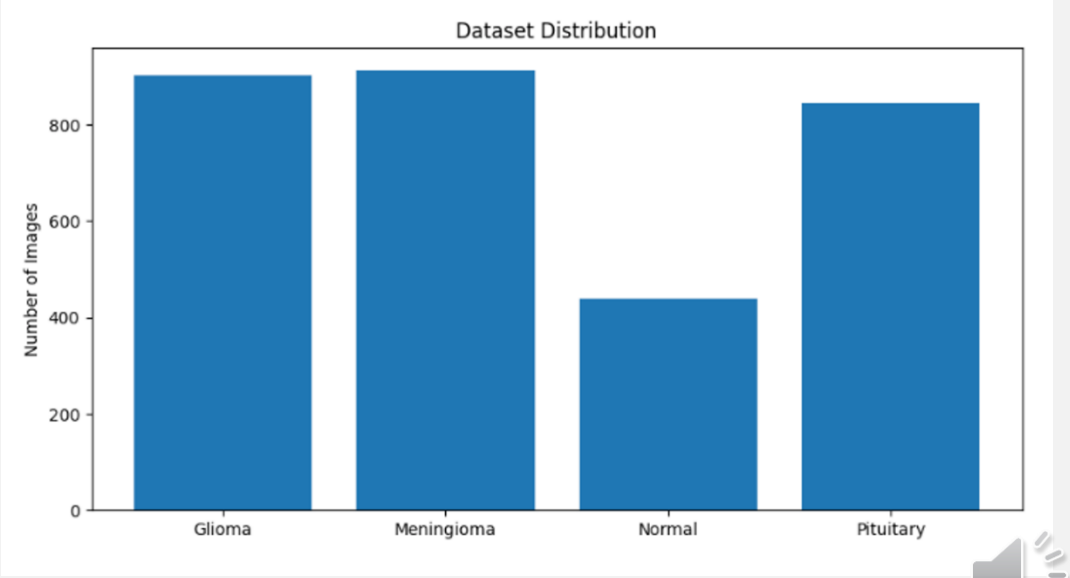
		실제 정답	
		True	False
분류 결과	True	True Positive	False Positive
	False	False Negative	True Negative

Performance Improvement

성능 개선 방법

- Batch Normalization
- K-Fold CV
- Callback 추가
- ResNet101
- Optimizer
- Ensemble

- Data Augmentation



참고

https://www.kaggle.com/code/shujunge/gridsearchcv-with-keras
https://blog.naver.com/nywoo19/221970913783
https://rinha7.github.io/keras-callbacks/
https://dacon.io/codeshare/4618
https://aistudy9314.tistory.com/29