

인공지능개론 과제#2 Fashion MNIST 데이터셋을 이용한 CNN 이미지 분류
ICT융합공학부 202204010 공성택

조건)

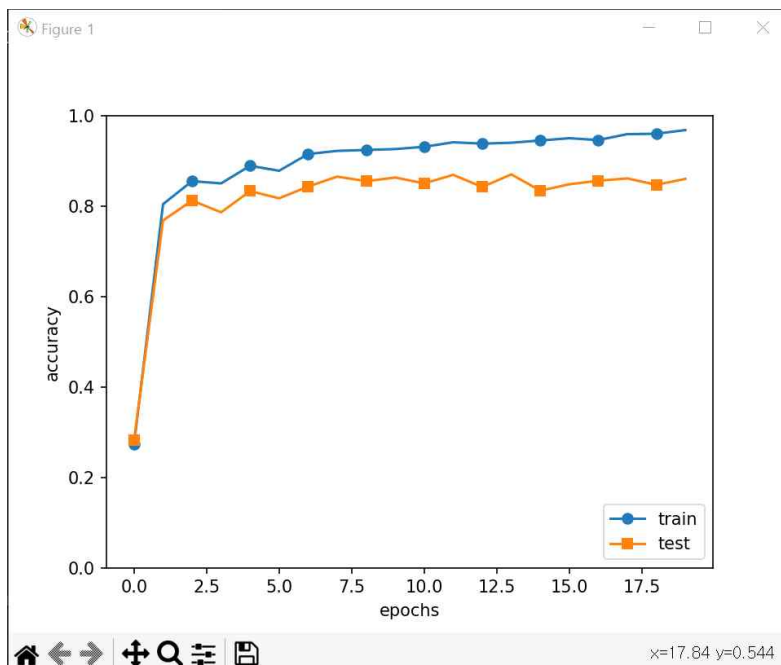
1. cnn사용

실습

과적합 해결을 위한 드롭아웃 적용

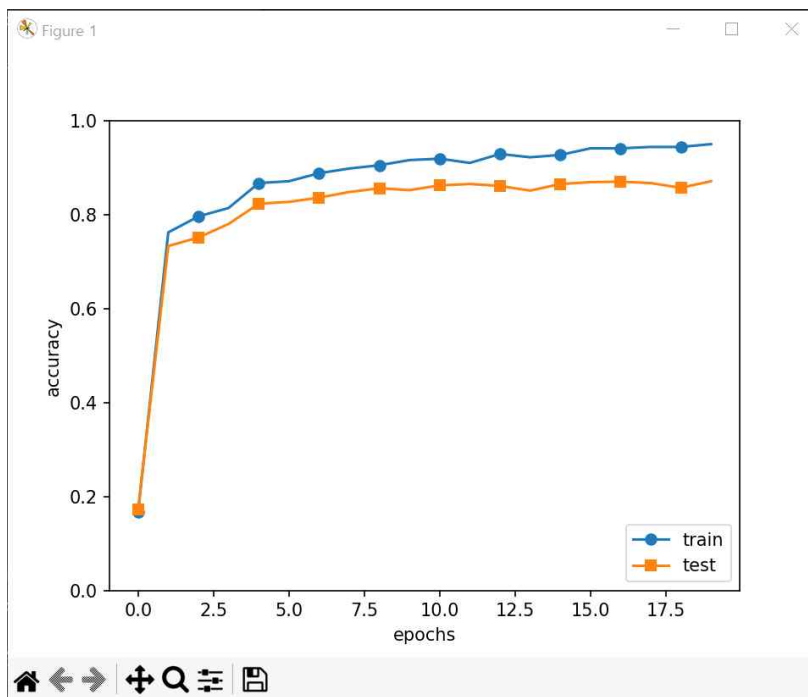
하이퍼 파라미터 튜닝 작업

```
Project ▾
Run train_convnet x
C:\Users\kst\python.exe C:\Users\kst\AI_Class\train_convnet.py
=== epoch:1, train acc:0.273, test acc:0.282 ===
=== epoch:2, train acc:0.805, test acc:0.769 ===
=== epoch:3, train acc:0.856, test acc:0.813 ===
=== epoch:4, train acc:0.851, test acc:0.787 ===
=== epoch:5, train acc:0.89, test acc:0.834 ===
=== epoch:6, train acc:0.879, test acc:0.818 ===
=== epoch:7, train acc:0.916, test acc:0.844 ===
=== epoch:8, train acc:0.923, test acc:0.866 ===
=== epoch:9, train acc:0.925, test acc:0.856 ===
=== epoch:10, train acc:0.927, test acc:0.864 ===
=== epoch:11, train acc:0.932, test acc:0.851 ===
=== epoch:12, train acc:0.942, test acc:0.87 ===
=== epoch:13, train acc:0.939, test acc:0.843 ===
=== epoch:14, train acc:0.941, test acc:0.871 ===
=== epoch:15, train acc:0.946, test acc:0.835 ===
=== epoch:16, train acc:0.951, test acc:0.849 ===
=== epoch:17, train acc:0.947, test acc:0.857 ===
=== epoch:18, train acc:0.96, test acc:0.862 ===
=== epoch:19, train acc:0.961, test acc:0.848 ===
=== epoch:20, train acc:0.969, test acc:0.861 ===
===== Final Test Accuracy =====
test acc:0.863
Saved Network Parameters!
```



2번째 실행

```
C:\Users\kst\python.exe C:\Users\kst\AI_Class\train_convnet.py
=== epoch:1, train acc:0.168, test acc:0.173 ===
=== epoch:2, train acc:0.763, test acc:0.734 ===
=== epoch:3, train acc:0.797, test acc:0.752 ===
=== epoch:4, train acc:0.815, test acc:0.781 ===
=== epoch:5, train acc:0.868, test acc:0.824 ===
=== epoch:6, train acc:0.872, test acc:0.828 ===
=== epoch:7, train acc:0.889, test acc:0.837 ===
=== epoch:8, train acc:0.899, test acc:0.849 ===
=== epoch:9, train acc:0.906, test acc:0.857 ===
=== epoch:10, train acc:0.917, test acc:0.853 ===
=== epoch:11, train acc:0.92, test acc:0.863 ===
=== epoch:12, train acc:0.911, test acc:0.866 ===
=== epoch:13, train acc:0.93, test acc:0.862 ===
=== epoch:14, train acc:0.923, test acc:0.852 ===
=== epoch:15, train acc:0.928, test acc:0.866 ===
=== epoch:16, train acc:0.942, test acc:0.87 ===
=== epoch:17, train acc:0.942, test acc:0.871 ===
=== epoch:18, train acc:0.945, test acc:0.868 ===
=== epoch:19, train acc:0.945, test acc:0.858 ===
=== epoch:20, train acc:0.951, test acc:0.872 ===
===== Final Test Accuracy =====
test acc:0.864
Saved Network Parameters!
```



학습데이터는 95%이상의 높은 정확도를 보이는 반면에 테스트데이터는 과적합 되는 모습은 줄었지만 그럼에도 85~88%의 정확도로 학습데이터에 비해 90%를 넘지 못해서 아쉬웠다.