

Datasets

- Fashion MNIST Dataset
- Labeled Faces in the Wild Dataset

CNN Architectures

- MiniVGGNet
- MiniGoogLeNet

Setup

- Scaled image sizes
- Limited training time
- Varied learning rates
- Original and Augmented

Training

[illegible]

Training

<i>Fashion MNIST</i>				<i>LFW Faces</i>			
<i>Without augmentation</i>		<i>With augmentation</i>		<i>Without augmentation</i>		<i>With augmentation</i>	
<i>MVGGN</i>	<i>MGLN</i>	<i>MVGGN</i>	<i>MGLN</i>	<i>MVGGN</i>	<i>MGLN</i>	<i>MVGGN</i>	<i>MGLN</i>
LR 1e-4	LR 1e-4	LR 1e-4	LR 1e-4	LR 1e-4	LR 1e-4	LR 1e-4	LR 1e-4
LR 1e-3	LR 1e-3	LR 1e-3	LR 1e-3	LR 1e-3	LR 1e-3	LR 1e-3	LR 1e-3
LR 1e-2	LR 1e-2	LR 1e-2	LR 1e-2	LR 1e-2	LR 1e-2	LR 1e-2	LR 1e-2
LR 1e-1	LR 1e-1	LR 1e-1	LR 1e-1	LR 1e-1	LR 1e-1	LR 1e-1	LR 1e-1

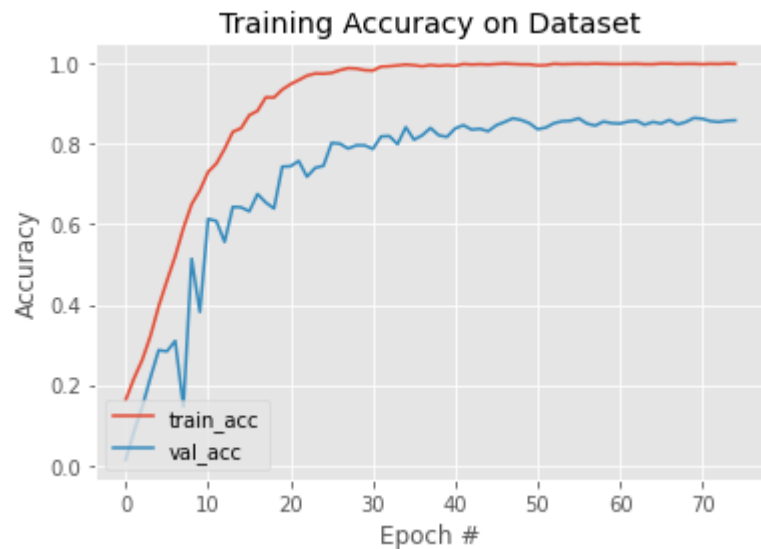
accuracy 0.86
 macro avg 0.84 0.82 0.82
 weighted avg 0.87 0.86 0.86

accuracy 0.94
 macro avg 0.94 0.94 0.94
 weighted avg 0.94 0.94 0.94

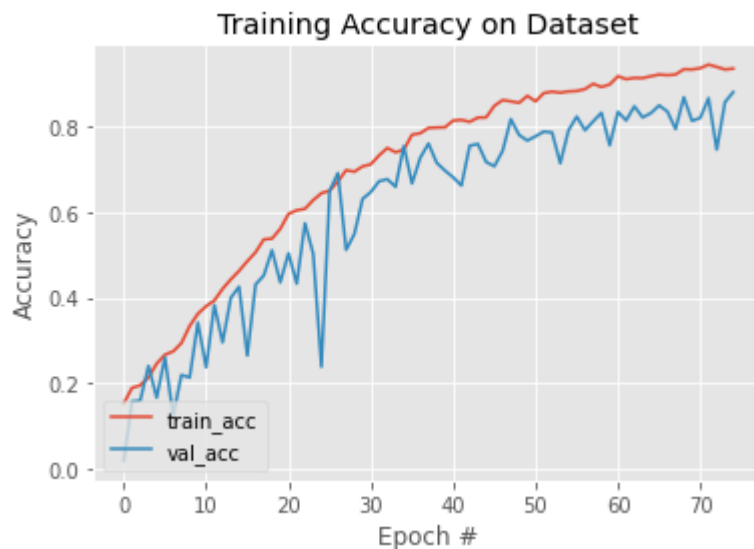
accuracy 0.88
 macro avg 0.87 0.83 0.83
 weighted avg 0.90 0.88 0.88

Augmentation and Learning Curves

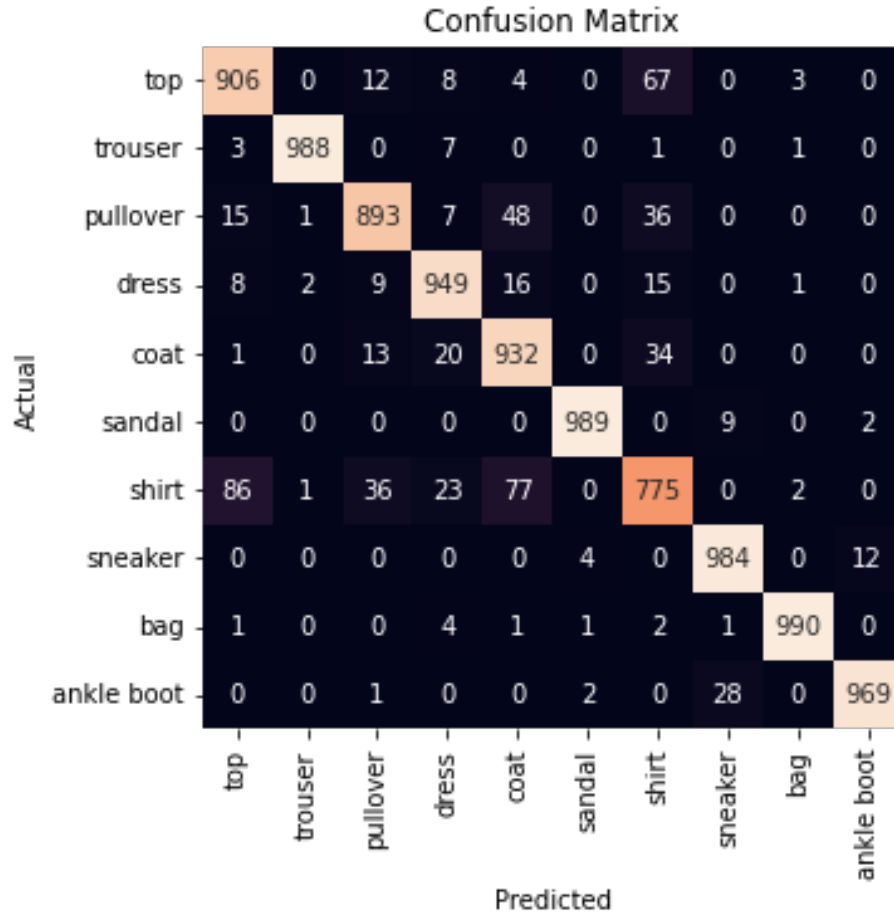
Without augmentation



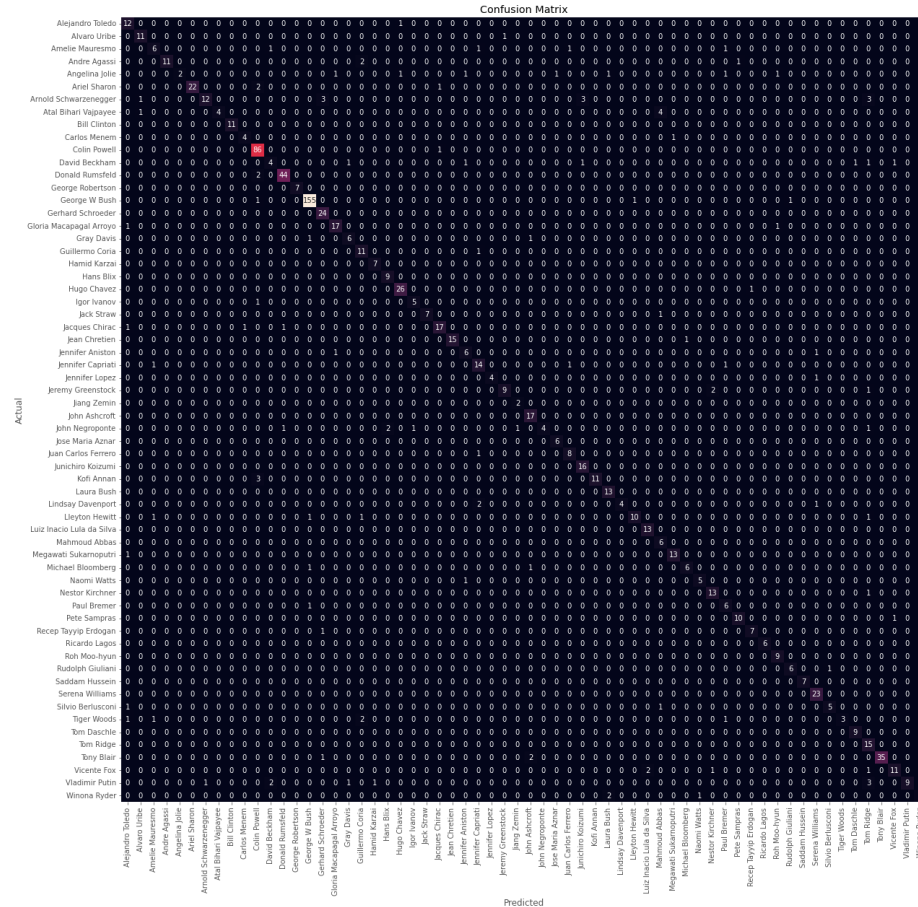
With augmentation



MNIST Fashion Confusion Matrix



LFW People Confusion Matrix



Limitations

- Time limitations
 - Longer training → better results
 - More samples → generalization
- Difficulties setting seed with Keras