Tutorial: <https://www.kaggle.com/valerasarapas/keras-siamese-network-on-mnist>

**“codes” folder:**

“NormalizePred.py” file (212 lines):

A file that contains necessary functions to train and test the Siamese Convolutional Neural Network for FashionMNIST. Contrastive loss function, and two-level pairwise similarity are applied.

“MultiLevel.py” file (181 lines):

A file that contains necessary functions to train and test the Siamese Convolutional Neural Network for FashionMNIST. Contrastive loss function, and four-level pairwise similarity are applied.

“3Level.py” file (168 lines):

A file that contains necessary functions to train and test the Siamese Convolutional Neural Network for FashionMNIST. Contrastive loss function, and three-level pairwise similarity are applied.

“0.25Label” (25 lines):

A file to create histograms to see distribution of predicted values for y when predefined similarity is 0.25.

**“files” folder:**

“fashion-mnist\_train”, “fashion-mnist\_test” files:

Original files downloaded from Kaggle (https://www.kaggle.com/zalando-research/fashionmnist).

“pairwise\_distribution” folder:

A folder contains the files used to create tables for distributions of predicted values for three-level pairwise similarity.

“0.25label” folder:

A folder contains the files used to create histograms for predicted values for y when predefined similarity is 0.25.

“multilevel\_confusion\_matrix” file:

An Excel file used to create confusion matrix for four-level pairwise similarity.

“3\_level\_confusion\_matrix” file:

An Excel file used to create confusion matrix for three-level pairwise similarity.

**“papers” folder:**

“Bowen\_Learning Latent Spiculated Features for Lung Nodule” file:

A paper from Bowen using Siamese Convolutional Neural Network and triplet loss function

“reading list” file:

A text files with some good tutorials related to SCNN, contrastive loss function, and TSNE.

**“presentation” folder:**

“ProjectSummary\_JoyceHou” file:

A PPT file summarizes the project from beginning to end.