Instruction to run file.

1. Presiquite

To run this file, you need an IDE which can run ipynb file, there are several ways such as Jupyter Notebook or Google Colab, Visual Studio Code, ...

Our source code is coded and run on Jupyter Notebook so we would recommend to install Jupyter Notebook from Anaconda to run our file to prevent errors.

All modules used in code will be installed when you run the code (there are pip install command within code). Dataset has also been included within one of the modules in our code so there is no dataset file.

To open and run source code, please follow these steps:

1. Download and unzip file “ANN\_Work\_report”
2. Within new extracted folder, there will be a file name “ANN.ipynb”, you need to use Jupyter Notebook to open this file.

1. Source code

Our file contains only one source code that is our final ANN. In this source code, it is recommended that you run all codes under “Libraries Import and Data Preparation” section to install and import all necessary modules.

“ANN construction and testing result”, “Details of Labels Accuracy” , “Confusion Matrix for accuracy metrics visualization” and “Saving trained model” are optional. If you want to retrain the ANN you could run codes in these sections.

“Load Model and Prediction”: this section is used to load the pretrained model for prediction, you can run the code in this section to load the ANN.

Note that in EMNIST Dataset, all images are while characters on black background, so if you want to use model to predict, the image should also be 28x28 pixel and in the same format.

E.g.:

, , 