Goal

Build and train a neural network for an image classification task. Provided that images in the dataset contain a single object the goal is to recognize the object and assign a corresponding label for each image.

Dataset

Dataset contains train, test and unlabelled parts. Labelled images represent 10 classes. Unlabelled images also represent the same classes but with no labels.
There are 1000 samples per class in the train set, 300 images per class in the test set and 100000 unlabeled images. Images have 96x96 resolution.

You need

Train a neural network using the train set. Evaluate the model using the test set. Calculate metrics and tune parameters.

Will be a plus

Find a way of utilizing unlabelled data in order to improve model performance

Output

Code, model weights and a report with metric values, diagrams and conclusions. It can be a Jupyter Notebook or Python scripts with a separate doc.