Abstract

Making machines or computer be able to recognize people's handwritings is still an ongoing research in Computer Vision. Digits themselves are still important parts of the humanity, therefore the ability to recognize handwritten digits will certainly helpful. The general choices for the classification algorithm includes Artifical Neural Network and Support Vector Machines. These algorithms could achieve good accuracy but nevertheless their training complexity are still considered to be high.

Another choice for the algorithm is Random Forest. Random Forest could achieve good results with little or no special preprocessing. In this book, Random Forest was tested with the MNIST handwritten digit dataset. Also tested was the feature vector called Histogram of Oriented Gradient. The result shows that Random Forest coupled with HOG could achieve good accuracy, as high as 97% with training time of only four minutes long.

Keywords: *random forest*, *machine learning*, *computer vision*, *digit recognition*