Finding Optimized Machine Learning Model For Recognizing English Handwritten Digit

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1 Description and Proposal

Deep learning allows computational models that are composed of multiple processing layers to learn representations of data with multiple levels of abstraction. These methods have dramatically improved the state-of-the-art in speech recognition, visual object recognition, object detection and many other domains such as drug discovery and genomics[1] Deep learning is used in computer vision widely. Computer vision is an interdisciplinary field that deals with how computers can be made for gaining high-level understanding from digital images or video. Computer vision is the science and technology of machines that see and perceive.[2]
Handwritten digit and character recognition is a computer vision problem. This can be achieved by using deep learning techniques.
There are several types of neural network available like Multilayer perceptron (MLP), Convolutional neural network (CNN)[3], Recurrent neural network (RNN), Long short-term memory (LSTM), Sequence-to-sequence models, Shallow neural networks etc. All these can be used to make a system that is capable of recognizing English Handwritten Digit.

Here, we are interested to find the optimized and effective neural network between

- Multilayer perceptron
- Convolutional neural network(CNN)

References

[1] Y. LeCun, Y. Bengio, and G. Hinton, "Deep learning," *nature*, vol. 521, no. 7553, p. 436, 2015.

[2] R. J. Schalkoff, *Digital image processing and computer vision*, vol. 286. Wiley New York, 1989.

[3] J. Bouvrie, "Notes on convolutional neural networks," 2006.