Abstract

Deep learning is developed in 2006 and it is a part of machine learning and also for the artificial intelligence. Deep learning provides state of the arts solutions of various problems in areas like speech recognition and processing, neural language processing, image processing, computer vision etc. To prepare and simulate these kind of solution, there are many open source frameworks like Theano, TensorFlow, CNTK, caffe, Torchnet, Deep Learning4j are available. Theano provides comparatively better hardware performance while TensorFlow provides better visualization by dataflow graphs. In this paper TensorFlow, Theano and CNTK will be compared on the basis of model Capability, Interface, Performance, Platform support, Speed, Distributed computing, Parallel execution. The best achievable goal of this work to display the best Deep Learning framework by implementing the neural network architecture for classifying images from several datasets. In above techniques some of the parameters of TensorFlow will give better performance than the others.

References


9. Alexey Kamenev, Microsoft Research “Deep Learning in Microsoft with CNTK”.
11. en.wikipedia.org for information about various deep learning framework.

Index Terms

Computer Science Information Sciences

Keywords

Deep Learning, Datasets, Neural Network, Performance Comparison, Theano, TensorFlow, CNTK.