A Statistical Optimization Driven Approach for Intrusion Detection Using Deep Neural Networks

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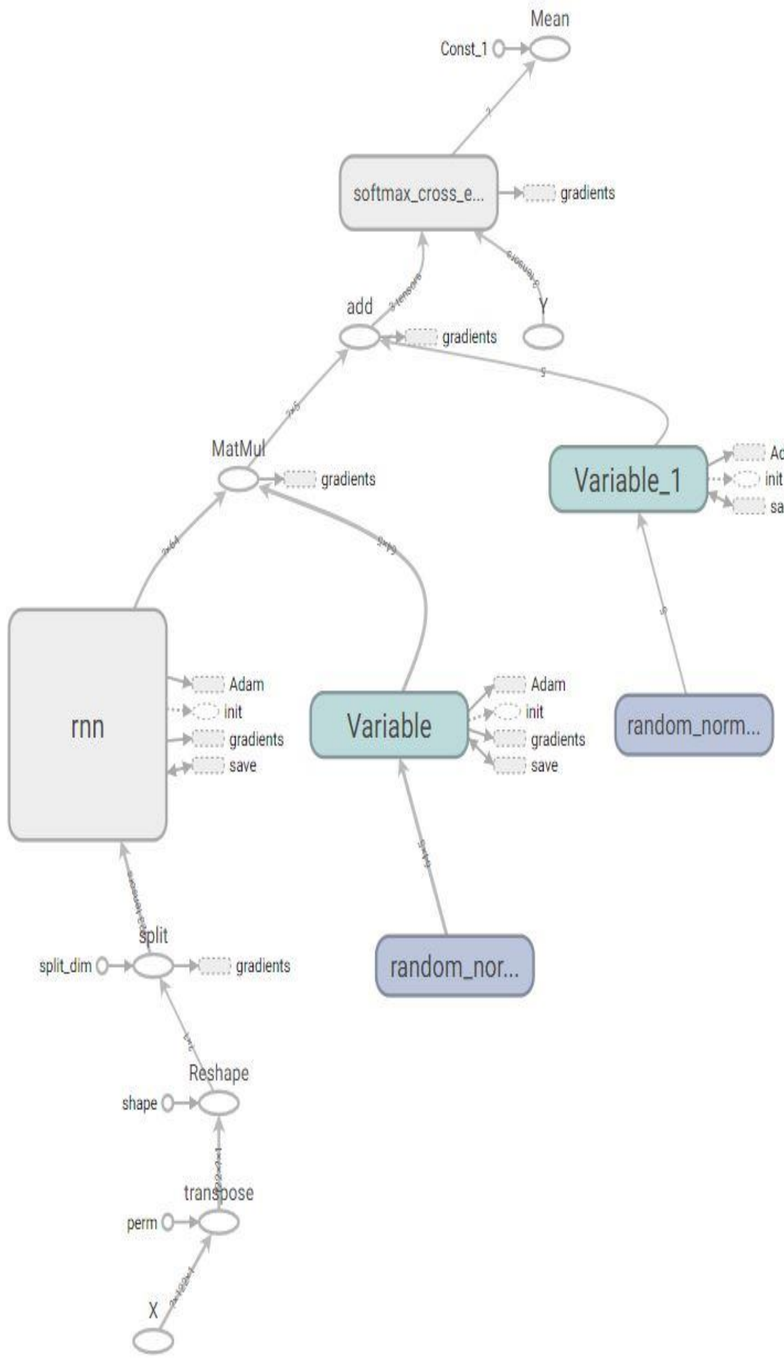
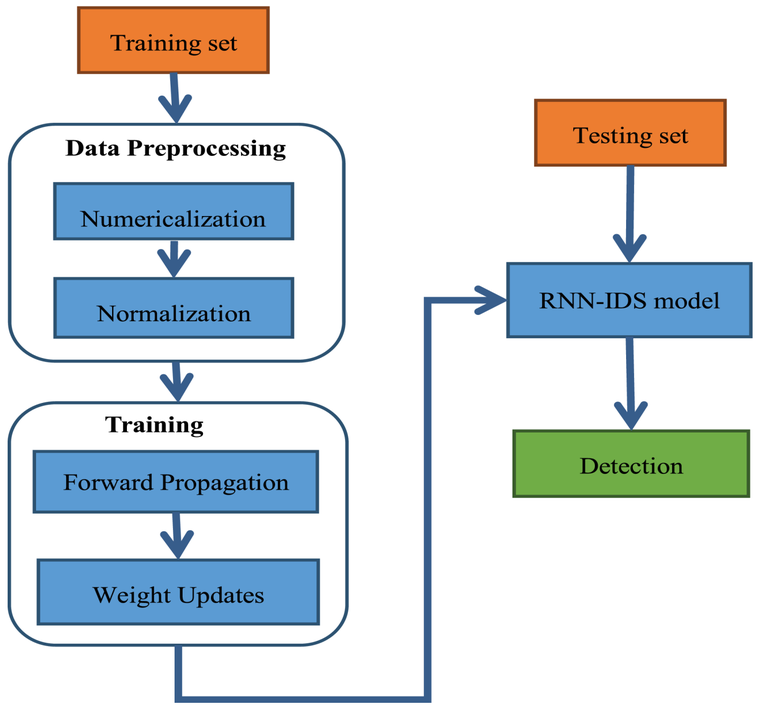
Summery

Attackers always find intelligent ways to hack into networks and steal important information. This study focuses on building a deep machine learning model using Recurrent Neural Networks and Convolutional Neural Network both with Long Short Term Memory (LSTM) to classify the network traffic using the NSL-KDD dataset.



Approach

Both the RNN and the CNN models were built using Python 3.6 with TensorFlow 1.8.0 with GPU acceleration. First the dataset needed to be numericalized by using the “one hot encoding” followed by normalizing the dataset.



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