

Weekly Report of Week 3

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Topic: Implements model from paper and prepare the presentation.

Description: From last week, professor assigned me to make a presentation on a progress in last 2 weeks. Thus, in this week most of the time, I'm making a summation on the progress that I research and analyze. The seminar was hosting on the Thursday afternoon. I discuss with professor on the work and professor is pointing out the details that I was miss in analysis the dataset.

Furthermore, I'm working on the implementation on the model from the paper called: Using a LSTM-RNN to classify network attacks (Muhuri, 2020) which I'm implementing follow the paper by using the same methods, building the Neural network follow the instruction and training. In the data preprocessing section, I change the attack types (23 attacks) of the dataset that I analyze before (NSL-KDD dataset) in to binary form (0,1) and I change some columns that contain string data into integer data by using One-Hot-Encoder, thus the features will increase from 38 features to 122 features and using the logarithmic scaling method to scale the data. In the final, I build the LSTM-RNN neural network to training the model, but the instruction is ambiguous, so the outcome of the training, which I trained in the supercomputer that JAIST has provided, didn't come out satisfiable. The accuracy of the model is about 50% but the paper is showing the high accuracy about 90% to 99%.

In next week, I will be looking on the implementation on this paper and looking for the methods that will change the data which is network traffic flows in to the images then using the images processing and make a machine learning model or deep learning to detect the abnormal threads in the system.