

Analysis of Multilayer Neural Network Modeling and Long Short-Term Memory

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Abstract : This paper analyzes fundamental ideas and concepts related to neural networks, which provide the reader a theoretical explanation of Long Short-Term Memory (LSTM) networks operation classified as Deep Learning Systems, and to explicitly present the mathematical development of Backward Pass equations of the LSTM network model. This mathematical modeling associated with software development will provide the necessary tools to develop an intelligent system capable of predicting the behavior of licensed users in wireless cognitive radio networks.

Keywords : neural networks, multilayer perceptron, long short-term memory, recurrent neuronal network, mathematical analysis

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