**Activation Functions: Comparison of Trends in practice and Research for Deep Learning**

Deep neural networks have been successfully used in diverse emerging domains to solve real world complex problems with may more deep learning(DL) architectures, being developed to date. To achieve these state-of-the-art performances, the DL architectures use activation functions (AFs), to perform diverse computations between the hidden layers and the output layers of any given DL architecture.

In this paper, we would like to present a survey on the existing Activation used in deep learning applications and highlights the recent trends in the use of the activation functions for deep learning applications. The novelty of this paper is that it compiles majority of the AFs used in DL and outlines the current trends in the applications and usage of these functions in practical deep learning deployments against the state-of-the-art research results. This compilation will aid in making effective decisions in the choice of the most suitable and appropriate activation function for any given application, ready for deployment.

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