**Title: Deep Learning using Improved performance in MLP and its Potential applications**

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**Abstract**

Deep learning techniques are a class of machine learning techniques that model hierarchical abstractions in input data with the help of multiple layers. Deep learning techniques have achieved state-of-the-art performance in computer vision, automatic speech recognition and in natural language processing. Deep Multilayer Perceptron (MLP) has received lot of attention recently due its high efficiency in recognizing images. The tutorial would focus on Deep MLP for classifying images. The use of Stacked denoising Auto encoders in a greedy layer-wise manner for initializing Deep Multilayer Perceptron will also be discussed in detail. Deep MLP requires higher computational cost due to the use of large number of hidden layers. It will be shown how to speed up Deep Multilayer Perceptron by parametrizing the weights and by introducing a speed up parameter. This not only helps in speeding up but also in increasing the classification accuracy (Chandra, et. al,2016). The proposed parameterization provides eight fold reduction in training time along with significant improvement in the classification accuracy of Deep MLP. Another redeeming feature will be to provide a technique for feature selection using Denoising Autoencoders where the feature significance is computed in an unsupervised manner based on the reconstruction error of masked features.

**Biography of Presenter**



B.Chandra is currently the chief Data Scientist at Sprinklr solns and has been a Professor with the Computer Science group of the Department of Mathematics, Indian Institute of Technology, Delhi for three decades. She was the Department Chair from 2004 to 2007. Her specialization areas include Deep Learning, Machine Learning, Neural Networks, and feature selection. She has been a visiting professor for a year each at the University of Pittsburgh, USA and at Penn State University, USA. She has also been a visiting scientist at NIST, Maryland during Summer 2012. She has published a large number of research papers in the area of Deep Learning, Machine Learning, and feature selection in International Journals like Neuro Computing, Pattern recognition, IEEE SMC etc. She has been the chairman of many sessions on Neural Networks in international conferences organized in USA, UK, Canada. She has been a principal investigator of many sponsored research projects in the area of Clustering, Neural Networks, Feature Selection and consultancy projects with Stock Market and Social Media Company. Currently, she is also an Adjunct Professor with the School of IT at the Indian Institute of Technology, Delhi apart from her full time position at Sprinklr Solutions