**INTRODUCTION**

Extreme learning machine (ELM) is an emerging learning technique that can be applied to large datasets typical size of Big Data for efficient parallel computation which provides better efficiency in comparison with iterative computing like backpropagation based algorithms in subject area such as supervised machine learning algorithms. With the advent of Big Data era, performance of the predictive model is always challenging, but could be addressed with Statistical Learning Theory (SLT) by finding necessary and sufficient conditions for non-parametric inferences in desire of learning model from data.

Related works have been done in recent to build predictive models like analysing opinions, sentiments by analysing pool of social media in order to analyse the behaviour and feedback of customers for providing better services or finding new business areas and techniques like NLP, CNN have been used to build multimodal sentiment analyser.

**IMPLEMENTATION**

The ELM output function could be defined as , where is the weight vector from hidden layer to output, is the random weight vector connecting from input x to hidden layer.

The Training of ELM performed in 3 steps, like a) Generating randomly the node parameters ( and ) , b) Computing the activation matrix V , and c) Computing the output weights by solving pseudo inverse problem of equation .

With Context of solving the problem with Apache Spark (library for high performance parallel computing), the computation of activation matrix V and weight , the ELM formulation is optimized using Stochastic Gradient descent (SGD). The Cost function is defined as . The MLlib library of Spark have the library available to compute the gradient algorithm.

**SAMPLING and VALIDATION**

Different Sampling techniques like Resampling, In-sampling used to handle the unbalanced and Uncertain Quantification issues. Also, in order of fitting the big data context, few techniques is applied to overcome the computational issues like, Little Bag of Bootstrapping approach of sampling bags of data reduce uncertainty quantification , finding the best model for whole dataset.

Under the Resampling umbrella, the Bag of Little Bootstraps approach considers only part of the original dataset, instead of the entire set, to create the training, validation and test sets. The γ parameter of the algorithm determines the performance and computational requirements of the procedure. For the In-Sample umbrella, the Rademacher Complexity and Uniform Stability techniques are simplified mainly by truncating their loss functions and streamlining the calculation of the empirical error. As Uniform Stability does not take the data distribution into account, one may consider the Bag of Little Hypothesis Stabilities technique which captures the features of the algorithm and data distribution. This is achieved through a fully empirical loss function bound and training the ELMs over a small data subset.

**RESULT and CONCLUSION**

The Concept level sentiment analysis is able to predict affective dimensions and polarity better than affective analogical reasoning and BLHS is found to be best method to perform MS. SRC and SUS are computational saving methods and L3 loss function is found to be best loss function for this task.

In the paper it has been shown, the suggested ways of carefully assessing the performance of ELMs on Spark context of big social data analysis and, an approach to support emotion recognition and polarity detection in natural language texts. Statistical Learning Theory allowed obtaining of rigorous and consistent generalisation bounds that can be used to assess the performance of ELM.

As most of the data that is available is not supervised it would be needed to extend the direction of this study towards semi-supervised setting.