CHAPTER - 7

CONCLUSION AND FUTURE SCOPE
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7.1 OVERVIEW

The research focused on extraction and categorization of opinions from the web-documents. As the opinions have many potential applications, mining on the reviews of the M-Learning users were contemplated. The research enhances the accuracy of categorization by enhancing the preprocessing methods and competent use of evolutionary algorithms for classification. The real world datasets in general contain inconsistent, noisy and incomplete attributes which pose a challenge of preprocessing the datasets.

Artificial Neural Networks (ANNs) are one of the promises in the computing domain. ANNs offer an ability to perform tasks outside the scope of traditional processors. ANNs recognize patterns within vast data sets and then generalize those patterns into recommended courses of action. The primordial distinction against the traditional algorithms is that the neural networks learn and are not programmed. Eventually the art of employing ANN involves the selection of learning rules, transfer functions, summation functions, and how to connect the neurons within the network.

Generating the solutions for optimization, the techniques inspired by natural evolution, such as inheritance, mutation, selection, and crossover are implemented.
7.2 PROMINENT INTERVENTIONS OF THE RESEARCH

Mining different kinds of knowledge from opinion-driven sources is interestingly a huge need and growing demand. For instance, organizations wish to know relevant and qualitative opinions towards products or services rendered, individuals wish to retrieve relevant information for personal use, and the need for understanding human behaviours through trends at real-time is also becoming more apparent and necessary. The ability to classify the large number of reviews from the Web sources is valuable to both academic research and practical applications. In this section, the outcomes of the present research study are expounded.

7.2.1 KN Preprocessing

In the formulation of corpus for the classification and further mining analysis, KN Preprocessing is utilized in the present study. The datasets were acquired from the reviews on the M-Learning system and they were preprocessed with the existing opinion mining preprocessors namely Stopword Removal, Stemming, Inverse Document Frequency, and Singular Value Decomposition. The proposed KN preprocessing is applied in order to enhance the classification of the opinions. The significant intervention by KN preprocessing involved in introducing confidence interval, which improves the formulation of the corpus. After the preprocessing, the acquired corpus is used with different classification algorithms. The results proved that the classification accuracy enhanced with the use of the proposed preprocessing technique.
7.2.2 KINN - A Neural Network based Algorithm

Biologically inspired classification algorithms are employed for better categorization of the reviews on the M-Learning system. Data enters at the inputs and passes through the network, layer by layer, until it arrives at the outputs. In the neural network operation, that is when it acts as a classifier, there is feedback between layers. The Sigmoidal summation functions are used in the layers. With the help of Information Gain, top five positive and negative values are selected for the subsequent dispensation into the feedback process. The convergence of the output is authenticated when the threshold value or the number of epochs is reached in the process of classification.

7.2.3 GKINN - A Genetic Optimized Algorithm

Genetic Optimization is the evolutionary approach which aims to improve the solution to a problem by keeping the best combination of input variables. Selection, Mutation and Crossover operators were iteratively fed forward to the input layers. The process after the summation and activation is augmented by genetically optimizing the learning rate and momentum. Through the process of calculating fitness value, computing and selecting the offspring count, the cross-over and mutation are applied in the process of generation of optimized values. Thus, with the amplified process the classification accuracy is found to be enhanced with M-Learning dataset.
7.2.4 Opinion Analysis Model

In the process of identifying subjective information such as opinions, and sentiments, from the human generated text, mining has become a tedious and difficult effort. The proposed opinion Analysis Model (OAM), the proposed model comprises various techniques for classifying the user generated content.

7.3 LIMITATIONS OF THE RESEARCH

Although the research has reached its aims, there were some unavoidable limitations.

A feature-based opinion summary of multiple reviews is not aforethought; instead sentence and document level classifications are made if they are opinionated.

There exist various approaches to compile sentiment words, namely dictionary-based approach, corpus-based approach which is less considered in the research.

Feed Forward neural network approach alone is thought-about, though other approaches like Self-Organizing Feature maps of ANN that exist to enhance the classification.

The analyses of the opinions are based on supervised learning.

In the research, Learning rate and momentum are the factors that alone are genetically optimized.
7.4 APPLICATIONS OF THE RESEARCH

The Opinion Mining is an area of interest that is applied in varied domains to extract knowledge from subjective and human generated opinions. This section discusses some of the areas identified for the application of the proposed algorithms and opinion analysis model. In the areas of education and training, the use of M-learning is becoming inevitable and efficient in reaching its objectives. The use of various M-Learning materials and products available on-line could be instructed based on the views of the users. Thus, to enhance the use of such resources effectively the proposed algorithms and model could be implemented.

The businesses and organizations in general spend a lump sum of the investments in finding the consumer sentiments and opinions. Hence, the mining on the opinions and sentiments are made for decision making process. Especially, the explosive growth of the social media has intuited the business and organizations to use the content for extracting and summarizing the information in them. When purchasing a product or using a service, every individual could scrutinize based on the opinions of those who have bought.

The opinions of a population on Politics and political issues could be mined for valuable information.

7.5 FUTURE DIRECTIONS

In the field of analyzing the subjectivity of the sentiments/opinions, advanced preprocessing techniques involving the removal of superfluous and malapropos data in the corpus will enhance the information retrieval.
Feature-based opinion summary will complement the mining of opinions as a whole. Dictionary-based approach and corpus-based approach shall improve the mining of the reviews.

Self-Organizing Feature map that considers training and mapping which automatically classifies the new input vector could be designed for better classification with neural networks.

Factors other than learning rate and momentum could be genetically optimized for speedy convergence.