CHAPTER 8

CONCLUSION AND SCOPE OF FUTURE WORK

The aim of this chapter is to draw conclusions of work so far done and presented in this thesis. The chapter also addresses some potential aspects of the work carried out through this thesis that need enhancement in future.

8.1 CONCLUSIONS

The works proposed through this thesis; to develop a concept for sentiment analyses, which is able to process real-time streaming data from social media and extract meaningful inferences in order to help industry, government agencies and users to achieve valuable insights. In order to accomplish the problem formulation, research framework was specified in the thesis chapters, which divides thesis into seven sections.

The work done in thesis has successfully accomplished the following objectives:

I. A multidimensional event prediction using dynamic keywords based techniques along has been proposed. This technique is applied in three different multidimensional events. In case of Political Election prediction, results were published on web, before the declaration by Election Commission of India. It shows how social media sources can help in forecasting election results before the actual results. Analysis of disease outbreak detection results shows that, the developing countries, where public health monitoring system are not quick and reliable, can also track disease outbreak in feasible time and take measure for prevention. In another section; short term sports related social media has been collected for predicting the outcomes.
II. Public emotions present in social media data offers unique challenges and opportunities for in decision-making in different domains. The major contribution of this research is to present that it is feasible to apply intelligent computational techniques for identification and classification of various types of emotions in texts. An effective technique for data collection and extraction of emotions in social media data has been presented through this chapter.

III. A rule based system for finding suspect and symptoms of swine flu using social media data has been developed. This method is the first attempt to use social media data rather than clinical datasets for decision making in identification of suspects. Rough sets theory help in reducing irrelevant attributes by using reducts methods. Tracking the symptoms of epidemics diseases from social media data and use rule-based system help in decision making. Given approach could give rapid information in various situations during epidemic and improve public health monitoring system in developing countries.

IV. Traditional methods of surveillance rely on bureaucratic, hierarchical, health-care system which adds a lot of time delays in detection that cannot usually gear up with the speed at which a disease is spread. The proposed framework focused on alternative methods of analysis and visualization of user’s opinions that do not depend upon the assumption of normality and historical data. An intelligent surveillance process model for decision making has been proposed through this chapter. The classification of the dataset has been performed using machine learning techniques in two phases which provide better results in comparison to other approaches proposed by other authors. A surveillance plot which measures the percentage of the mosquito-borne disease has been presented which clearly indicated that the proposed predictive mapping improves prediction performance.
V. From the e-commerce perspective, receiving consumer reviews/feedbacks can significantly improve its business action plan in order to increase profits. These reviews help in gaining business intelligence and improving customer satisfaction. Deep learning has been used for predicting sentiments present in customer reviews using two popular deep learning models such as Convolution neural networks (CNN) and Recurrent Neural Network (RNN) using the Long Short-Term Memory (LSTM) architecture.

8.2 SCOPE OF FUTURE WORK

The main challenge with social media data is the potential bias present in social media posts that can influence decision making. Hence, in the future work, more detailed research on how to deal with bias may enhance the outcomes.

The work carried out through this thesis can be heavily exploratory in nature. The framework presented in the thesis helps in gaining understanding early stages of events. However, in the future development can take input streams from different social media platforms for extracting more meaningful inferences. Moreover, other machine learning algorithms can be implemented in future work.

The pre-processing approach plays a crucial role in getting quality data and help in data normalization. Advanced Natural Language Processing could optimize the outcomes.

The work presented in this thesis can be pursued further in several domains. One of the tasks is to consider emotion intensity for classification. Explore the relation between emotion classes and emotion intensity. Content-based analysis of emotion data is yet another possible line of research. Data sets containing emoticons, stickers and other images with texts representing emotions can also be taken in to consideration in future.