CHAPTER 6

CONCLUSIONS AND FUTURE WORK

6.1 Conclusions

This thesis considers the design optimization of fuzzy logic systems when data, containing information on the desired behavior of the fuzzy logic. This type of problems has widespread applications in control systems and system identification.

This concern research proposed some soft computing technique which are basically used to solve the computing and optimization problems. A Fuzzy Logic System with some inputs and different outputs and some constant subsequent rules was introduced. The innovative aspect of this formulation is its methods that lend itself to an efficient implementation.

The chapter 3 proposed an expert system for employability valuation using fuzzy logic control and neural fuzzy logic control. The concern research finds the capability or level of any employee with the help of three employability skills education, personal development and understanding power. The proposed system is beneficial for association to calculate employability level for any individual. With the help of proposed expert system employer can easily filter best suitable candidates based on their education, personal development and understanding power.

The chapter 4 proposed a fuzzy based scheduling algorithm, which is an efficient scheduling algorithm. It obtains batter result rather than another algorithm. This research shows the comparison between SJF, Priority scheduling algorithm, Fuzzy based CPU scheduling algorithm and proposed new fuzzy based scheduling algorithm. The average

waiting time, and average turnaround time of proposed fuzzy based algorithm is much better than the Priority scheduling algorithm, Fuzzy based CPU scheduling algorithm and closer to results obtained by SJF algorithm, but SJF algorithm doesn't deal with priority. Results prove that the proposed algorithm is much better than existing algorithms.

Successively, a fuzzified job shop scheduling algorithm for more than two machines also proposed. It provides minimum final makespan as well as better partial makespan. Proposed algorithm also provides more than one choice for optimum result. The proposed algorithm compared with Gupta's heuristic. Results show that proposed algorithm is far better than Gupta's heuristic.

Chapter 5 introduce concept of air conditioning system with fuzzy logic control system and neuro fuzzy logic control. It is observed that Neuro fuzzy logic algorithm gives a better control than fuzzy logic. In Neuro fuzzy logic algorithm, performance of compressor speed is much better than fuzzy logic algorithm. In fuzzy logic control design, the compressor speed remains constant for temperature range from 35°C onwards, but in Neuro fuzzy control design, it increases consistently with respect to temperature. By this it provides proper output and save energy. It controls the room environment and weather.

Subsequently, a fuzzified duct system with two ducts also proposed. Here one duct works as the supply duct and another works as the return duct in order to rotate constant air inside the room. The supply duct gives the desired temperature within the room and the same air returned by the exhaust fan of cooler. In most of the cases the desired temperature without humidity is maintained with a minimum speed of the fan and the pump.

6.2 Future work

Fuzzy logic is used in the various control systems like Braking systems, Linear and Nonlinear Control, Pattern Recognition, Financial Systems, Operation Research, Data Analysis, can also manage information systems, in microwave ovens, in many household products and car systems, Fuzzy control of the subway system, in washing machines. In addition to all these, fuzzy logic is also used in various engineering fields. Besides temperature controls, fuzzy logic has been implemented or proposed for many other processes in food technology, namely determination of key ingredients for new products; automated feeding systems; and so on.

The proposed systems in this thesis can be further extended in following way:

- It is possible to consider some more employability skills in order to design a robust employability assessment system.

- The proposed fuzzified job shop scheduling algorithm applicable only for two machines, it can be extended for more than two machines.