

## CONCLUSION

In this dissertation, we have provided a characterization of interval digraph (bigraph) by a list of forbidden matrices (configurations). These configurations, in turn, help us to find a recognition algorithm of an interval digraph in  $O(n^3)$  time. Also we have attempted to provide a characterization of bigraphs of Ferrers dimension 2 in terms of asteroidal triple of edges (ATE). Lastly we have characterized base interval (di) graph and Robin digraph with unit length interval and established their interrelation with the class of interval, overlap or containment digraphs. But still a good number of related problems remain unsolved in this area. We list below some of these which arise immediately as a consequence of our work and further research work may be carried out in future.

1. Sen *et al.* [1995] showed that interval digraph can be viewed as a generalization of interval graph. But does such relationship exist between circular arc digraph and circular arc graph ? Between interval containment digraph and interval containment graph ? Or between overlap digraph and overlap graph ?
2. Sanyal and Sen [1996] introduced the concept of consistent ordering of the edges of a digraph (graph) and used it to obtain a new characterization of an interval digraph (graph). One can study if this characterization can be used to obtain a recognition algorithm of an interval digraph (graph) more efficiently.
3. In chapter 3, we have made an attempt to characterize a bigraph (digraph) of Ferrers dimension 2 in terms of asteroidal triple of edges and could solve the problem in only one case when the graph contains a strong bisimplicial edge. But the other case, when all the bisimplicial edges of the graph are weak remains unresolved.
4. Müller [1997] gave some example of ATE's in a bigraph. But the complete list of ATE in a bigraph remains to be found out.
5. An algorithm to recognize the existence of ATE in a bigraph remains to be found out.

6. One may study the bigraphs corresponding to its forbidden configurations of interval bigraphs and find out the correlation between these bigraphs and ATE; consequently one may find out forbidden bigraph characterization of interval bigraphs.
7. Using biorder representation of Ferrers digraph, West [1998] gave a short inductive proof of the interval digraph characterization. Also one may find out short inductive proof of interval digraph characterization in terms of  $(R, C)$  partition.
8. Sanyal [1994] characterized the adjacency matrices of Robin digraphs. In chapter 4 we have characterized the adjacency matrix of base interval (di) graph. Also in the same chapter we have characterized the overlap base interval digraphs and base interval graphs in terms of intersection of two digraphs having other model represented by intervals. But one may introduce the notion of 'base circular arc' in the similar fashion of base interval and investigate the corresponding problems for the case when the base interval is replaced by base circular arc.