SUMMARY AND CONCLUSION

This dissertation is devoted to study intuitionistic fuzzy graphs, complement intuitionistic fuzzy graphs, arc strength, mild balanced intuitionistic fuzzy graphs, equally balanced intuitionistic fuzzy subgraphs, extended vertex regular intuitionistic fuzzy graphs, extended edge regular intuitionistic fuzzy graphs and extended regular intuitionistic fuzzy graphs.

In Chapter 1, Preliminary definitions and results of fuzzy sets and fuzzy graphs are given.

In Chapter 2, Preliminary definitions of intuitionistic fuzzy sets and intuitionistic fuzzy graphs and their properties and characterizations are discussed.

In Chapter 3, the arcs are classified into sturdy arcs, feeble arcs and δ* weak arcs. Firm path and infirm path are introduced and their properties, characterizations and applications are analyzed.

In Chapter 4, an attempt to develop the basic concepts and properties of complement intuitionistic fuzzy graphs, intuitionistic fuzzy bridges, intuitionistic fuzzy cutnodes and operations: sum, union and cartesian product on intuitionistic fuzzy graphs have been made.

In Chapter 5, intense subgraphs, feeble subgraphs, mild balanced intuitionistic fuzzy graphs are equally balanced intuitionistic fuzzy subgraphs are studied based on their densities. The operations sum and union of these subgraphs are analysed.

In Chapter 6, extended degree of vertices and extended degree of edges in intuitionistic fuzzy graphs are defined and extended vertex regular intuitionistic fuzzy graph and extended edge regular intuitionistic fuzzy graphs are introduced. Further extended regular intuitionistic fuzzy graphs are
studied. An application of extended regular intuitionistic fuzzy graph in faculty performance improvement system is presented.

This work can be extended to other types of intuitionistic fuzzy graphs such as max-min intuitionistic fuzzy graphs, product intuitionistic fuzzy graphs, \( \mu \)- product intuitionistic fuzzy graphs and \( \nu \)- product intuitionistic fuzzy graphs. Also the arc analysis of complement graphs, mild balanced intuitionistic fuzzy graphs and extended regular intuitionistic fuzzy graphs is an open problem. More real life problems can be studied and solutions can be predicted by using these intuitionistic fuzzy graphs.