This Doctoral thesis entitled “BURR TYPE XII SOFTWARE QUALITY ASSESSMENT” was taken up at the instance of Dr. R. Satya Prasad, motivated, as I was, by a desire to study some problems of using Statistical Process Control (SPC) techniques for assessing software reliability using Non-Homogenous Poisson Process (NHPP) and a Burr type XII model as mean value function. Control mechanisms to develop control charts and to assess whether process is under control or out of control were developed.

Our attempts and findings in these directions are presented in the chapters that follow with an aim of proposing analytical techniques for quality software. Chapter 1 is on motivation of research, problem statement, objective, approach and the organization of the thesis. Chapter 2 is on the exhaustive review of literature. Chapter 3 is on methodology for proposed study.

Reliability Prediction and analysis for software failure process of Interval domain data based on Burr Type XII distribution of NHPP using Maximum Likelihood Estimation (MLE) method for parameter estimation is illustrated with different datasets in Chapter 4.

A control scheme, SPC can be applied to assess the software failure process for Interval domain data based on Burr Type XII distribution of NHPP using Maximum Likelihood Estimation (MLE) method for parameter estimation is illustrated with different datasets in Chapter 5.

Detection of reliable software components, based on Interval domain data using Burr Type XII model of NHPP with SPRT for different datasets is developed and results are presented in Chapter 6. Summary and conclusion with future scope is presented in Chapter 7.

The respective brief contents of these three problems are given in the “Introduction”. The numerical calculations and subsequent tables are provided at appropriate places in the respective chapters. List of references are arranged alphabetically and some of our findings in published form are appended towards the end of the thesis.