Abstract

Software reliability models play a dominant role in the analysis of failure data for real time command and control software systems. Goel and Okumoto model is a non homogenous Poisson Process software reliability growth model which has gained a lot of importance in software reliability analysis and prediction. The process of parameter estimation is the major drawback of this model because the independent nature of attribute values is considered in estimation. But in real world applications, there are correlations existing among the attributes. Keeping this criterion, a bivariate autoregressive model of order 1 which forms a linear combination of variants namely software faults and test workers is proposed. A numerical illustration is presented to evaluate the performance of the developed model with that of the existing univariate autoregressive models and found that the proposed model outperforms than exiting model in evaluating and predicting software reliability.

References


Index Terms

Computer Science
Information Retrieval
Keywords
Software Reliability  Autoregressive Model  Reliability Evolution