Abstract

Software Reliability is considered to be an essential part of software systems; it involves measuring the system’s probability of having failures; therefore, it is strongly related to Software Quality. Software Reliability Growth Models are used to indicate the expected number of failures encountered after the software has been completed, it is also an indicator of the software readiness to be delivered. This paper presents a study of selecting the best Software Reliability Growth Model according to the dataset at hand. Several Comparison Criteria are used to yield a ranking methodology to be used in pointing out best models. The Social Spider Algorithm (SSA), one of the newly introduced Swarm Intelligent Algorithms, is used for estimating the parameters of the SRGMs for two datasets. Results indicate that the use of SSA was efficient in assisting the process of criteria weighting to find the optimal model and the best overall ranking of employed models.


Index Terms

Computer Science

Software Engineering

Keywords

Software Reliability, SRGMs, Models Ranking, Weighted Criteria, Social Spider Algorithm.