Software Reliability Modeling has been one of the much-attracted research domains in Software Reliability Engineering. Software reliability means provide reusable, less complex software, to perform a set of successful operation and his function within a provided time and environment. Software designers are motivated to develop reliable, reusable and useful software. In past, Object-Oriented Programming System (OOPS) concept is to be used in purpose of reusability but they are not providing powerful to cope with the successive changing as per requirements of ongoing applications. After that Component Based Software system (CBSS) is in floor. It is based on reusability of his component with less complexity. This paper presents a new approach to analyze the reusability, dependency, and operation profile as well as application complexity of component-based software system. Here, we apply Fuzzy Logic approach to estimate the reliability of component-based software system with the basis of reliability factor.

Abstract

Software Reliability Modeling has been one of the much-attracted research domains in Software Reliability Engineering. Software reliability means provide reusable, less complex software, to perform a set of successful operation and his function within a provided time and environment. Software designers are motivated to develop reliable, reusable and useful software. In past, Object-Oriented Programming System (OOPS) concept is to be used in purpose of reusability but they are not providing powerful to cope with the successive changing as per requirements of ongoing applications. After that Component Based Software system (CBSS) is in floor. It is based on reusability of his component with less complexity. This paper presents a new approach to analyze the reusability, dependency, and operation profile as well as application complexity of component-based software system. Here, we apply Fuzzy Logic approach to estimate the reliability of component-based software system with the basis of reliability factor.
Software Reliability Estimation of Component based Software System using Fuzzy Logic

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Index Terms

Computer Science Software Engineering

Keywords

Component, Object-Oriented Programming System (OOPS), Component Based Software system (CBSS), Fuzzy Logic, Fuzzy Inference System (FIS), Adaptive Neuro Fuzzy Inference System (ANFIS), Reliability, Application Complexity, Component Dependency, Operation Profile, Reusability, Fuzzification, Defuzzification, Reliability Model, Rule Based Model, Path Based Model, Additive Model, etc.