Abstract

To reduce the development time, software reuse methodologies have been used across the software industries. Software reuse is a method to assemble the software components from the existing software. To take advantage of reuse concept, it is necessary to measure the software reusability of the existing components. Although there are various statistical methods exists to find the reusability of the components but soft computing has not been explored for component reusability. The aim of this paper is to formulate, build, evaluate, validate and compare neuro-fuzzy approach in prediction of software reusability of software components during the subsequent releases of a software development process. In this research we have applied neuro-fuzzy approaches which yield to better accuracy than the standalone fuzzy and neural approach. We have taken four main dependent factors to estimate the reusability of software components. This proposed approach has also been validated against different releases of open source development. Also we have proposed a framework for component reusability Management in software component intermediate releases using the neuro-fuzzy approach. The analysis and results of the study shows that neuro-fuzzy provides better results as compare to Fuzzy Inference System and neural network but applicability of best approach depends on

the data availability and the quantum of data.

References


528-561.

Index Terms
Computer Science Software Engineering

Keywords
Components Component based system neuro-fuzzy reusability Software Metrics Prediction