Abstract

Rapid industrialization in the past few decades has necessitated the ever-increasing demand for newer technologies leading to the dramatic development of sophisticated software for cost estimation and is expected to grow manifold in the forthcoming years. The improper understanding of software requirements has often resulted in inaccurate cost estimation. In analogy concept, there is deficiency in handling the datasets containing categorical variables though there are innumerable methods to estimate the cost. The proposed fuzzy analogy method is a new approach based on reasoning by analogy for handling both numerical and categorical variables where the uncertainty and imprecision solution is ascertained by studying the behaviour pattern of linguistic values utilized in the software projects. The performance of linguistic values in fuzzy sets has improved in the proposed method. The performance of this method analyzed using Mean Absolute Relative Error (MARE) and Variance Absolute Relative Error (VARE) criteria indicates that the fuzzy analogy outperforms other techniques in terms of both quality and accuracy of the results in software cost estimation.


Index Terms

Computer Science
Software Engineering

Keywords
Fuzzy analogy
Datasets
Cost estimation
Categorical variables
Linguistic values