Abstract

Software Estimation has always been one of the prompting challenges for the software engineers. Software cost estimation techniques helps in forecasting the amount of effort required to develop software. Constructive Cost Model (COCOMO) is considered to be the most widely used model for effort estimation. Cost drivers have great influence on the COCOMO and this paper investigates the role of cost drivers in improving the precision of effort estimation using different membership functions. Fuzzy logic-based estimation models are more suitable when formless and inaccurate information is to be used. The proposed fuzzy COCOMO model consists of a collection of linear sub-models joined together smoothly using fuzzy membership functions. This paper focus on the comparative analysis of COCOMO81 using various fuzzy membership functions. The present work is based on COCOMO81 dataset and the experimental part of the study illustrates the approach and compares it with the standard version of the COCOMO81. It has been found that Fuzzy based COCOMO model gives better performance when compared to the ¬COCOMO81, demonstrating a smoother transition in its intervals, and the achieved results were closer to the actual effort.


P. Musilek, W. Pedrycz, G. Succi, and M. Reformat, "Software cost estimation..."
    neural network-based effort estimator”, Proceedings of Second International Workshop on
  - C. J. Burgess, and M. Lefley, “Can genetic programming improve software effort
    estimation? A comparative evaluation”, Information and Software Technology, 43 2001,
    pp. 863–873.
  - M. Shepperd, and G. Kadoda, “Comparing software prediction techniques using
  - B. K. Clark, “The Effects of Software Process Maturity on Software Development
    Effort”; PhD Dissertation, Faculty of Graduate School, University of Southern California,
    1997.
  - Harsh Kumar Verma, Vishal Sharma, “Handling Imprecision in Inputs using Fuzzy
    Logic to Predict Effort in Software Development”; IEEE 2nd International Advance
  - Ch. Satyananda Reddy, KVSVN Raju, “Improving the accuracy of effort estimation
    through Fuzzy set combination of size and cost drivers”; WSEAS TRANSACTIONS on
    COMPUTERS, Vol(8), Issue (6), pp. 926-936, June 2009.

Index Terms

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