Abstract

Ever since the evolution of software, prediction of desirable level of product quality which is measured at every phase of development is deemed a continuous and consistent effort. Quality is however viewed in various dimensions which also includes effective defect management. However, predicting the defect pattern within the empirical projects which directs the efficient management of defects in the future projects is always a challenging task in software industry.
Clustering technique enables one to mine the defect associated information in order to achieve the above said challenge. Hence, there is dire need to develop software defect prediction model based on unsupervised learning which can help to predict the defect proneness of projects when defect labels for modules do not exist. This paper provides an empirical analysis of defects logged in several projects developed at various software industries using data mining and Fuzzy C-means (FCM) clustering approaches. This approach enables one to predict the characteristics of software projects early in the development phases. It further aids the project manager to plan and control the project activities which aims towards implementation of strategies for improved productivity and sustainability of the company in the industrial market.

References

- Xiao Hong Shan, GuoRui Jiang, Tiyun Huang, A framework of estimating software project success potential based on association rule mining, 978-1-4244-4639-1/09/$25. 00 ©2009 IEEE.
- Ahmed E. Hassan , Ahmed E. Hassan, Mining Software Engineering Data ,ICSE &apos;10, May 2-8 2010, Cape Town, South Africa Copyright 2010 ACM 978-1-60558-719-6/10/05 . . . $10. 00
- Imran Siwani and Miriam Capretz, APPLICATION OF FUZZY LOGIC FOR IMPROVED SOFTWARE PROJECT MANAGEMENT ESTIMATIONS, 2004 0-7803-8253-6/04/$17. 00 ©2004 IEEE.
- A. H. Yousef, A. Gamal, A. Warda, M. Mahmoud,Software Projects Success Factors Identification using Data Mining,1-4244-0272-7/06/$20. 00 ©2006 IEEE
- WEKA Data Mining Software in Java: http://www. cs. waikato. ac. nz/ml/weka/
- Shi Zhong, Taghi M. Khoshgoftaar, and Naeem Seliya, Analyzing Software Measurement Data with Clustering Techniques, Florida Atlantic University. 1094-7167/04/$20.

Index Terms

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Keywords

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