A SURVEY OF SOFTWARE EFFORT ESTIMATION TECHNIQUES USING MACHINE LEARNING

Research Oriented
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Spring, 2017

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Abstract—Software effort estimation is an aspect of software engineering involving evaluation of numerous different changing factors related to the creation of a system. Historically, estimation methods have relied on construction cost models (COCOMO) and function point analysis (FPA) to deliver accurate estimation values. We explored recently published works from 2016, describing the incorporation of machine learning techniques to produce effort estimations. We reviewed papers that utilize machine learning combinations and compared numerous single techniques for better accuracy. Our research has surveyed current state of the art techniques involving Bayesian networks, artificial neural networks, genetic algorithms, particle swarm optimization and random forests. We present our findings and show a comparison of the various outcomes for better prediction. This research is important because it directly affects the quality of a project and the benefit of a company. Overestimating may threaten the client relationship while underestimating may produce a poor project due to insufficient resources. The application of the machine learning techniques applied to standard estimation datasets will be the focus in our review. Machine learning is an important method to build estimating models, therefore, one can produce more accurate predictions in effort estimation. We expect students to learn the importance of software effort estimation, the base standards for expression of effort, and how it can be used in predicting the effort or cost of a project.

I. FIVE MAIN REFERENCES
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