Multi-Objective Optimization for Software Testing Effort Estimation

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        Yellow Zone, Academic 1
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ABSTRACT

Software Testing Effort (STE), which contributes about 25-40% of the total development effort, plays a significant role in software development. In addressing the issues faced by companies in finding relevant datasets for STE estimation modeling prior to development, cross-company modeling could be leveraged. The study aims at assessing the effectiveness of cross-company and within-company projects in STE estimation. A robust multi-objective Mixed-Integer Linear Programming (MILP) optimization framework for the selection of cross-company and within-company projects was constructed and estimation of STE was done using Deep Neural Networks. Results from our study indicate that the application of the MILP framework yielded similar results for both cross-company and within-company modeling. The modeling framework will serve as a foundation to assist in software testing effort estimation prior to the development of a new software project.

This paper will be presented at the 28th International Conference on Software Engineering and Knowledge Engineering (SEKE) which will be held on July 1-3, 2016, San Francisco Bay, California, USA.

Supervisor: Dr Jacky Keung

Research Interests: Software Effort Estimation; Software Quality Assurance; Technical Debt; Text Mining.

All are welcome!

In case of questions, please contact Dr Jacky KEUNG at Tel: 3442 2591, E-mail: jacky.keung@cityu.edu.hk, or visit the CS Departmental Seminar Web at http://www.cscityu.edu.hk/news/seminars/seminars.html.