AN ADVANCED DEEP LEARNING MODEL FOR SOFTWARE DEVELOPMENT STORY POINT PREDICTION

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Abstract

Story Points are the number one estimation metric for the modern age software development industry. Proper estimations produce a proper sprint, Proper sprints produce a proper and fruitful software development project. Estimates hold a great key factor in an effective sprint. Each sprint planned in a project which is following Agile methodology, is crucial to develop a successful software project. A story point is not "just a number". It contains the amount of work to do, the complexity and the risk factors associated with the backlog item or the user requirement. However, in the modern software development industry teams are using individual thinking to predict story point. But this leads to many problems including under and over predictions which are not accurate enough in the long run of the project.

Machine learning provides the ability for the machines to learn about data and carry on tasks without obvious programming. It is one of the most inspired revolutions in the history of the information technology industry. This artificial intelligence component helps to solve many complex and sophisticated real world problems. Therefore, Machine learning could be used to predict the story points in an effective way. This research gives an overview of how Machine Learning techniques can be used to predict story points accurately.

Using the new and advanced deep neural network BERT, several models were built and tested their performance. The analysis and prediction is performed using just the text description of the development items. The prediction model is inspired by the SkLearn and Keras learning platforms. The results achieved in the development and testing are quite exceptional and the system was evaluated by industry experts with positive and promising feedback.

Key Words: Story points, Deep Neural Networks, BERT, Classification, NLP, Agile Estimations