



**INFORMATICS
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In Collaboration with

UNIVERSITY OF WESTMINSTER

**Predicting the Bug Fixing Time as a Regression task using
Sentence embeddings and CNN**

BFT Predictor

A Project Proposal by

Ms. Dinuvi Upethra Munasinghe

Supervised by

Ms. Sapna Kumarapathirage

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Abstract

Prediction of the software bug fixing time is a crucial task during sprint planning and preplanning in the software development world. If more than the required time is allocated the software developers may be idle else if less time is allocated the developers may not have enough time to complete the task and this may hinder the other tasks as well. Knowing the exact bug fixing time not only helps software developers but also program managers and senior management as they can get a clear idea about how much time it will take to solve all the software bugs in that particular development cycle, which may in return help them plan their costs and resources better. This will also help them to plan the deadlines better.

With the help of machine learning techniques, the author wants to automate the process of software bug fixing time. Using natural language processing techniques for the bug titles the author plans to create a deep learning model. Sentence embeddings will be used to capture the semantic meanings of the bug titles and will be used with a Convolutional neural networks (CNN) model for the predictions. The aim of the research was to build a model to predict the bug fixing time making the lives easier for anyone who wants to predict a software bug fixing time.

The assessments of the bug fixing time prediction's implementation yield high numbers, proving that the strategy was successful. This widens the scope of software issues while also relieving people of the effort of manually estimating the time needed to resolve bugs.