Abstract

The development process involved developers contribution based his/her cognitive thinking in the real time process. The developer’s performance is dynamic as per their cognitive load. The cognitive load is un-deterministic as well hidden and integrated in the developer’s process. This paper attempt to identify software developer cognitive measure which influences the development process using neural network back propagation model. It describes the conceptual view on conventional construction of neural network for cognitive measure observation of software development processes. A neural network model designed to present the structure of developer’s performance such as Regularity, Task Completion, Accuracy, Team Involvement and Reporting are used to generate the Performance and Cognitive Load of the output layer. To obtain the Performance and the Cognitive Load from the given input, the Cognitive work load such as physical ability, mental ability, temporal ability, effort, frustration and performance are assigned to a hidden layer. The observation and the results are described and discussed as part of the paper.

- Brain Drain: Evaluating the Impact of Increased Cognitive Load During Self-Paced Running Performance, J McCarron, TL Hodgson, MF Smith, Published in British Journal of sports Medicine, 2013.

- Analysis of Developers Cognitive Complexity Association for software development K. Banu, Research Scholar, Mother Teresa Women’s University, Kodaikanal, Tamilnadu & Dr. N. Rama, Research Supervisor, Presidency College, Chennai -5

- Comparative Study on Multidimensional Developers Performance with Cognitive Load K. Banu, Research Scholar, Mother Teresa Women’s University, Kodaikanal, Tamilnadu & Dr. N. Rama, Research Supervisor, Presidency College, Chennai -5

- Software Developers Performance relationship with Cognitive Load Using Statistical Measures K. Banu, Research Scholar, Mother Teresa Women’s University, Kodaikanal, Tamilnadu & Dr. N. Rama, Research Supervisor, Presidency College, Chennai -5


- Neural Networks on the NetBeans Platform, Zoran Severac published by Oracle, Feb 2011.
Study on Influence of Cognitive Load for Software Developer’s Performance using NNBP Algorithm


Index Terms

Computer Science  Algorithms

Keywords

Cognitive load  Performance  Neural network  Back Propagation  Influence factor