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COMPARATIVE STUDY OF BUG PREDICTION MODELING USING CERTAIN ENTROPY MEASURES

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ABSTRACT

Information theory is a well established mathematical theory underpinning all modern digital communications. It is also needed to enable the communication system to carry information from sender to receiver over a communication system. Although the formal study of information theory began in 1924 by Nyquist and mathematical foundations for information theory was established by Hartley in 1928, but the concept of information theory was created by Shannon in 1948. Entropy is an important concept of this theory. It is an uncertainty measure which informs how much information is there in an event. The more uncertain the event the more information it gives. Software testing is the process of testing bugs of a program, thus it is done in order to resolve this uncertainty. Also, software testing enables to gain knowledge of a software system. In this article, a benchmark for modeling of bug prediction using different measures of entropy has been proposed.

***Keywords*:** *Bug prediction, Entropy, Information theory, Software testing, Uncertainty.*