In this paper, has been investigated the predicted accuracy and confidence intervals of performance on multi–core processor i5–460M in various modes of processor included: single, parallel and hyper–threading on SPEC CPU2000 with fixed point operations. The experiments have been performed by Intel–vtune 2013 and have been modeled base on two methods of regression analysis that are Multi–linear and Robust regression along with the accuracy of their predictions. Result of this paper is applicable for producers and users of operating systems and applications due to more accurate models have a lower risk in prediction and thus they can contribute to the better scheduling of applications.

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**Index Terms**

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Keywords
Nehalem  Performance  SPEC CPU2000  Regression  Prediction accuracy  Confidence interval