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Benchmarking regression algorithms for income prediction modeling

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This paper aims to predict incomes of customers for banks. In this large-scale income prediction benchmarking paper, we study the performance of various state-of-the-art regression algorithms (e.g. ordinary least squares regression, beta regression, robust regression, ridge regression, MARS, ANN, LS-SVM and CART, as well as two-stage models which combine multiple techniques) applied to five real-life datasets. A total of 16 techniques are compared using 10 different performance measures such as R2, hit rate and preciseness etc. It is found that the traditional linear regression results perform comparable to more sophisticated non-linear and two-stage models. The experiments also indicated that many regression techniques yield performances which are quite competitive with each other (as MARS, M5P, ANN and LSSVM).

Biography

Azamat Kibekbaev received his B.S. (2011) from Fatih University and M.S. (2013) from same University both in Industrial Engineering, and doing his Ph.D. (2013) in Industrial Engineering at Özyeğin University. He is particularly interested in data mining applications in banking and healthcare analytics.

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