A DISTRIBUTION-FITTING METHOD OF REGRESSION

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We propose a distribution fitting method for linear regression. In order to estimate the regression coefficients, a goodness of fit index, derived from Kolmogorov test, for the residuals is considered and the likelihood that the residuals follow the hypothesized distribution is maximized. The related optimization problem is solved using exhaustive search. Numerical experiments have been done to compare the method with ordinary least squares (OLS) method. There is some indication that, the method may give more accurate estimates in some situations. More specifically, better estimates of the regression coefficients may be possible when error terms closely follow the hypothesized distribution, which is completely specified.