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Prediction intervals for real estate price prediction

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Automated procedures of real estate price estimation and prediction have been used in the real estate sector since 15 years. Various providers of real estate price predictions are available, e. g., the platform Zillow, or Immoscout 24 from Germany. Simultaneously, the problem of real estate price prediction has become a subject of statistical and machine learning literature. The current providers and theory strongly focus on point predictions. For users, however, interval predictions are more useful and reliable. A perspective approach for obtaining prediction intervals is quantile regression. We analyse several methods of quantile regression, in particular linear quantile regression, support vector quantile regression, quantile gradient boosting, quantile random forest, k-nearest neighbour quantile regression, L_1-norm quantile regression. The performance of the methods are evaluated on a large data set of real estate prices with relevant covariates. It turns out that the best predictive power is obtained by linear quantile regression and k-nearest neighbour quantile regression.

Keywords

real estate price, prdeiction interval, quantile regression

Special/invited session

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