Abstract

In this article, Particle Filter and C-means are used to predict a value of a point in a time series. Similar data in a time-series are grouped using C-means algorithm. Afterward, a number of particle filters are used as sub-predictors. These sub-predictors start from different points, which are the centers of clusters resulted from clustering algorithm. Outputs from all filters were used to obtain Final prediction result. A weighted average method is used to aggregate the outputs of the filters. Particle filters are used in here to model non-Gaussian time series. Benchmark datasets were used to evaluate the proposed algorithm. To measure its prediction performance, the results derived from the proposed model were compared with those of other algorithms. The comparison proved the effectiveness and accuracy of the proposed method.

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Index Terms

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Keywords

Prediction, Time Series, C-means, Particle filter, Stock price, Importance Resampling.