Abstract

In this research investigation, the author presents two Models of One Step Forecasting.

Theory

The author presents below two models of forecasting:

Given

\[ Y_n = \{y_1, y_2, \ldots, y_n\} \]
\[ Y_{(k+1)\in n} = \{y_k, y_{(k+1)}, \ldots, y_n\} \]
\[ Y_{1,(n-k)} = \{y_1, y_2, \ldots, y_{(n-k-1)}, y_{(n-k)}\} \]

\[ j^{th} \text{ arrangement of } Y_{1,(n-k)} \text{ among the} \]
\[ (n-k)! \text{ arrangements} \]

\[ \text{Cosine Similarity}(Y_{(k+1)\in n}, Y_{1,(n-k)}) = \text{Dot Product}(Y_{(k+1)\in n}, Y_{1,(n-k)}) \]
Model 1

\[ y_{n+1} = \sum_{k=0}^{n-1} \alpha_{n-k} y_{n-k} \]

\[ \alpha_{n-k} = \frac{\text{Cosine Similarity}(Y_{(k+1),n}^*, Y_{1,(n-k)})}{\left\{ \sum_{k=0}^{n-1} \text{Cosine Similarity}(Y_{(k+1),n}^*, Y_{1,(n-k)})^2 \right\}^{1/2}} \]

Model 2

\[ y_{n+1} = \sum_{k=0}^{n-1} j \alpha_{n-k} y_{n-k} \]

\[ j \alpha_{n-k} = \frac{\text{Cosine Similarity}(Y_{(k+1),n}^*, Y_{1,(n-k)})}{\left\{ \sum_{j=1}^{(n-k)} \sum_{k=0}^{n-1} \text{Cosine Similarity}(Y_{(k+1),n}^*, Y_{1,(n-k)})^2 \right\}^{1/2}} \]

References

http://www.vixra.org/author/ramesh_chandra_bagadi


https://www.otexts.org/fpp/2/3


https://www.otexts.org/fpp/3/1
http://www.forecastingblog.com/?p=134


https://www.otexts.org/fpp/2/5


Pound Sterling Live. "Euro Forecast from Institutional Researchers", A list of collated exchange rate forecasts encompassing technical and fundamental analysis in the foreign exchange market.


J. Scott Armstrong; Kesten C. Green; Andreas Graefe (2010). "Answers to Frequently Asked Questions"


