Time Series Models and Object Clustering

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1 Introduction

2 Clustering

Clustering is the act of separating data into discrete groups to help analysis and prediction.

2.1 k-means

2.2 k++means

2.3 Initialization Effects

2.4 Comparisons

2.5 Image Segmentation Experiments

3 Time Series Models

Time Series Models are used for a number of analytical and predictive purposes, such as modeling fluctuating inventory levels, commodity prices, and stock prices.

3.1 Box-Jenkins Methodology

A time series can contain any of the following components:

- Trend
- Seasonality
- Cyclic
- Random

1. Condition data and select a model
    - Identify and account for any trends or seasonality in the time series.
    - Examine the remaining time series and determine a suitable model.
2. Estimate the model parameters
3. Assess the model and return to step one if necessary

3.2 ARIMA Models

ARIMA Models are a combination of Autoregression, Integration, and Moving Average models. They are denoted by ARIMA(p,d,q), where p=autoregression factor, d=level of integration, and q=moving average factor

3.3 ARIMA Variable Selection

4 Conclusion

5 Figures & Tables

6 Appendix