Clustering Empowerment in Fuzzy Time Series Forecasting: A Comprehensive Review and Analysis

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ABSTRACT

This research paper presents a comprehensive survey of existing literature on the integration of fuzzy time series forecasting and clustering techniques. Fuzzy time series forecasting has gained prominence for its ability to model and predict uncertain and imprecise temporal data, making it particularly applicable to real-world scenarios where traditional forecasting methods may fall short. The incorporation of clustering techniques into fuzzy time series forecasting further enhances its efficacy by identifying patterns and relationships within the data, thereby improving the accuracy and reliability of predictions. The survey encompasses a thorough examination of various methodologies employed in the fusion of fuzzy time series and clustering, highlighting key advancements, challenges, and trends. The paper reviews a wide range of applications across diverse domains, such as finance, energy, and healthcare, where this hybrid approach has demonstrated notable success. This paper aims to provide researchers, practitioners, and decision-makers with a comprehensive understanding of the current state of fuzzy time series forecasting using clustering techniques. It sets the stage for future advancements in this interdisciplinary field and guiding the development of more robust forecasting models.

Keywords: Clustering, Fuzzy time series, Forecasting

How to Cite