Abstract

In this paper, we have presented a new particle swarm optimization based multivariate fuzzy time series forecasting method. This method assumes five-factors with one main factor of interest. History of past three years is used for making new forecasts. This new method is applied in forecasting total number of car accidents in Belgium using four secondary factors. We also make comparison of our proposed method with existing methods of fuzzy time series forecasting. Experimentally, it is proved that our proposed method perform better than many existing fuzzy time series forecasting methods. The interest of this paper centers in applying swarm intelligence approaches in forecasting related problems. The dataset is taken from National Institute of Statistics, Belgium.
References

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- Maurice Clerc, 2006, “Particle Swarm Optimization”, ISTE Ltd, USA.
Index Terms

Computer Science

Algorithms

Keywords

Average forecasting error rate (AFER)  Fuzziness of fuzzy sets  Fuzzy If-Then rule  particle swarm optimization (PSO)