

PROPÓSITO: *Generación de Conocimiento*; SECTOR → DISCIPLINA: (Tecnologías de la Información y Comunicaciones → Computación)

2018-01-11

COMPARATIVE STUDY OF ARIMA METHODS FOR FORECASTING TIME SERIES OF THE MEXICAN STOCK EXCHANGE
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Predicting volatility in stock market price indices is a major economic problem. The idea of forecasting time series is that the patterns associated with past values in a data series can be used to project future values. The study of volatility can be applied to solving these economic problems, because volatility allows measuring the risk of asset portfolios, since it shows the behavior of the variation of asset prices. In order to be able to predict effectively the future behavior of a time series, it is necessary to know the attributes of the series with the correct prediction method and thus to be able to define training patterns. The accurate selection of the attributes evaluated in a time series defines the impact on prediction accuracy. In this work the study of kurtosis and the comparison between different ARIMA methods for the solution of time series of the Mexican Stock Exchange and the Makridakis contests are shown.

LIBRO: Fuzzy Logic Augmentation of Neural and Optimization Algorithms: Theoretical Aspects and Real Applications, Studies in Computational Intelligence - Springer-Verlag (pags. -), ESTADOS UNIDOS; ISBN: 978-3-319-71007-5;

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2015-12-10

TWOPIILP: AN INTEGER PROGRAMMING METHOD FOR HCSP IN PARALLEL COMPUTING CENTERS

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Scheduling is a problem in computer science with a wide range of applicability in industry. The Heterogeneous Computing Scheduling Problem (HCSP) belongs to the parallel computing area and is applicable to scheduling in clusters and high performance data centers. HCSP has been solved traditionally as a mono-objective problem that aims at minimizing the makespan (termination time of the last task) and has been solved by Branch and Bound (B&B) algorithms. HCSP with energy is a multi-objective optimization problem with two objectives: minimize the makespan and the energy consumption by the machines. In this paper, an integer linear programming model for HCSP is presented. In addition, a multi-objective method called TwoPIILP (Two-Phase Integer Linear Programming) is proposed for this model. TwoPIILP consists of two phases. The first minimizes the makespan using a classic branch and bound method. The second phase minimizes the energy consumption by selecting adequate voltage levels. The proposed model provides advantages over mono-objective models which are discussed in the paper sections. The experimentation presented compares TwoPIILP versus B&B and NSGA-II, showing that TwoPIILP achieves better results than B&B and NSGA-II. This method offers the advantage of providing only one solution to the user, which is particularly useful for applications where there is no decision maker for choosing from a set of solutions delivered by multi-objective optimization methods.

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A COMPARISON BETWEEN MEMETIC ALGORITHM AND SEEDED GENETIC ALGORITHM FOR MULTI-OBJECTIVE INDEPENDENT TASK SCHEDULING ON HETEROGENEOUS MACHINES

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A Comparison Between Memetic Algorithm and Seeded Genetic Algorithm for Multi-objective Independent Task Scheduling on Heterogeneous Machines

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15-06-13

AN EFFICIENT REPRESENTATION SCHEME OF CANDIDATE SOLUTIONS FOR THE MASTER BAY PLANNING PROBLEM

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The master bay planning problem (MBPP) arises in the context of maritime transportation. In particular, MBPP consists of determining an efficient plan to stowage the containers into the containership such that the total loading time is minimized. This