

Editorial

The papers included in this *CIT*'s issue belong to the areas of batch process modeling, traffic modeling, network security, and soft computing. In his paper titled *Stochastic Model and Computational Measures of Batch Process Queuing System with Hetero Multiservers* C. S. Reddy tackles the problem of multiprocessor system modeling, which finds its application in the areas of transaction processing systems, communication networks, as well as flexible manufacturing systems. For his Markov chains based model he provides results for a number of performability parameters.

The following three contributions address communication networks issues. Traffic prediction for high-speed networks is examined in Hong Zhao's and Nirwan Ansari's paper *Wavelet Transform Based Network Traffic Prediction: A Fast On-line Approach*. In order to ensure both an appropriate quality of service for multimedia applications along with high bandwidth utilization, they use a wavelet based predictor. Results obtained through simulation show that their method RCCWLMK achieves a consistent reduction of computational complexity along with smaller prediction error with respect to known ones. In the next paper by Afshin Shaabany and Fatemeh Jamshidi, also focusing on network traffic issues, titled *Network Traffic Deviation Detection Based on Fractal Dimension*, deviation of network traffic is studied with the purpose of enhancing the effective operation of a network. A new algorithm is presented to monitor the aggregate network traffic in order to rapidly detect traffic deviations occurrences in a network, which is based on both wavelet transform and fractal dimension.

Predicting Number of Zombies in DDoS Attacks Using Pace Regression Model by B. B. Gupta addresses the well-known network security problem by analyzing it through the prediction of the number of zombies using a pace regression model. The author provides simulation results for his model that show a lower error rate.

The last two papers make use of soft computing algorithms in solving problems in such diverse areas as antenna placement and vehicle routing. In their contribution *Genetic Algorithm Aided Antenna Placement in 3D and Parameter Determination Considering Electromagnetic Field Pollution Constraints*, authors Tomislav Rolich and Darko Grundler present a genetic algorithm based method for antenna placement in 3D space and parameter determination satisfying environmental electromagnetic field pollution constraints. In this extension of their previous research of the problem in two dimensions to a three-dimensional space, they target aerial parameters that would ensure a minimal EM field strength while at the same time being below prescribed limits for EMF pollution. On the other hand, in his paper *An Evolutionary Algorithm Based on Repeated Mutations for Solving the Capacitated Vehicle Routing Problem*, Krunoslav Puljic describes an evolutionary algorithm approach to solving the problem of scheduling a fleet of vehicles to distribute goods between depots and customers. The results obtained through simulation indicate a competitiveness compared to other metaheuristics. Also, this approach based on repeated mutations can assure similar performance results as the one based on local search.

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