

Special Issue: Recent Trends and Advances in Computer Science- Technology and Applications

Guest Editorial

With the high development of Computer Science-Technology and Applications, Computer Science-Technology as one of IT's mainstays has become one of the today's main important key engines, and propels the progress of global science & technology and human society. The computer science-technology and applications have been played very important roles in the current world. This Special Issue aims to exhibit some academic researches on recent trends and advances in computer science-technology and applications.

"Isomorphic New Parallel Division Methods and Parallel Algorithms for Giant Matrix Transpose" researches on the giant matrix transpose based on some new parallel division methods and parallel algorithms which should improve the efficiency of giant matrix transpose.

"Algorithm Dynamics Analysis Method" proposes an interesting way for algorithm dynamics. The computational complexity is decided only by initial state and final state of the problems and the algorithm's details are needless, which is helpful to study algorithm dynamics analysis.

"Adaptive Requirement-Driven Architecture for Integrated Healthcare Systems" proposes a requirement-driven architecture for healthcare information systems that will be able to respond to new requirement, which is useful to raise the quality of the integrated healthcare systems.

"A 105 dB DR, -101 dB THD+N Sigma-Delta Audio D/A converter with A Noise-shaping Dynamic Element Matching Technique" discusses a sigma-delta audio digital-to-analog (DIA) converter with some useful ideas and matching techniques.

"Adaptive Extraction of Principal Colors Using an Improved Self-Growing Network" introduces a global permutation method to rearrange the input sample order based on Linear Pixels Shuffling in order to improve the performance of network.

"Study on Optimization Technology in Computing Ordinal Number" proposes a proportion method to improve and optimize the speed on computing ordinal number efficiently with some interesting preponderance to computer ordinal number.

"Research on the Reconfiguration Router Unit Component Composition Technology Based on the Agent" uses agent method to realize and improve the reconfiguration router unit component composition technology.

"A Novel Numerical Computation Method Based on Particle Swarm Optimization Algorithm" studies a novel numerical computing method and algorithm based on particle swarm optimization.

"Nonlinear Combinational Forecasting Based on Support Vector Machine" proposes a nonlinear combinational forecasting model mainly based on SVM and several useful forecasting methods.

"Optimizing the Management of Reference Prediction Table for Prefetching and Prepromotion" applies bimodal insert policy (BIP) and propose scalar filter policy (SFP) in the RPT management.

"The Future-Oriented Middleware Technology" prospects some research tendencies in the important and interesting field of the middleware technology.

"Breeding Software Test Data with Genetic-Particle Swarm Mixed Algorithm" studies on particle swarm optimization into genetic algorithm to breed software test data automatically.

"A Semiotic multi-agent modeling approach for clinical pathway management" focuses on how to develop a multi-agent modeling method to build up the system that can increase the execution efficiency of clinical pathway.

"Study on Early Warning of Competitive Technical Intelligence Based on the Patent Map" uses a series of patent maps of Web 2.0 technologies for improving the early warning of competitive technical intelligence.

"Edges Extraction Method based on Fractal and Wavelet" proposes a method combining fractal with wavelet for edges extraction, which can gain better segmentation than histogram-based approach.

"The research of fuzzy segment query under the spatial database" studies the N-N query with the fuzzy segment in spatial database and the experimental result shows high query efficiently.

"Game-based Data-Forward Decision Mechanism for Opportunistic Networks" introduces a new way based in game-theory with context of nodes and the simulation results have shown that this mechanism enjoys superiority in delivery radio and total consumption among forwarding.

"Anomaly Detection Based on a Multi-class CUSUM Algorithm for WSN" aims to optimize threshold parameters, the size of which increases with the number of traffic sequence and results show that the proposed algorithm achieves a higher and more accurate rate of detection and lower false positive rates.

"Ontology-based Enterprise Content Retrieval Method" studies an ontology-based method of the enterprise content retrieval as the traditional way of information retrieval is based in keywords that computer cannot understand users' potential semantic and personalized query requirements.

“**Analysis of Valid Closure Property of Formal Language**” focuses on basis operations of Chomsky’s languages and analyses valid closure property of formal language.

Of course, all the research findings of the papers in this Special Issue are little in computer science-technology and applications, which is just as one drop of water in an ocean. Although as so, it is our biggest hope that the readers of this Special Issue could find and would enjoy something, such as the academic ideas, methods and enlightening from the papers in this Special Issue.

Guest Editors:

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Zhou Qihai (1947-) is a Full Professor (from 1995), Doctor’s (and Master’s) tutor and a head of Information Technology Application Research Institute, School of Economic Information Engineering, Southwestern University of Finance and Economics (SWUFE), China. He graduated in 1982 from Lanzhou University, China; has been working in SWUFE since 1982, successively hold posts from teaching assistant (1982-1987), lecturer (1987-1991), vice professor (1991-1995, promoted anomaly in 1991), professor (1995-today, promoted anomaly in 1995); and got the titles of both “Outstanding experts (enjoyed government subsidies) with outstanding contributions of Sichuan province, China” (summa cum laude of Sichuan province government, 1996) and “One hundred academic and managerial leading heads of China informatization” (summa cum laude about this domain in China, 2006). He has published 46 academic books and over 212 academic papers; and is President of IITAA (International Information Technology & Applications Association), Chair or Organizing Chair of some important international conferences. His research interests are in algorithm research, computational

geometry, isomorphic information processing, economics & management computation, eBusiness, and so on. More (in Chinese) about Prof. Zhou Qihai is shown here: <http://www.iitaa.com/member-ZhouQiHai.doc>



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