

Table of Contents

Keynote	1
Implementing a Wireless Geophysical Sensor Network <i>Tracy Camp</i>	1
Bioinformatics & Healthcare	3
Experimental Study of the Effect of Different Scanning Patterns for Blood Smear Analysis <i>Khaled El Bannan, Mostafa M. A. Mohamed, Behrouz H. Far, Christopher Naugler</i>	3
A New Scatter Plot Stress Evaluation Method Using Photo-Plethysmography <i>Minami Tsuchiya, Michio Yokoyama</i>	9
Complex Data Analysis in Biomedical Applications <i>Donna L. Hudson, Maurice E. Cohen, Samuel E. Hudson</i>	17
Extending Watershed Segmentation Algorithms for High-Throughput Phenotyping <i>Mitchell L. Neilsen, Shravan D. Gangadhara, Trevor Rife</i>	23
Software Engineering & Information Systems	29
A Hierarchical Precedence Concurrency Control Protocol for High Data Contention Database Environments <i>Weidong Xiong, Mohammed Hamdi, Feng Yu, Wen-Chi Hou</i>	29
RAID on a Heterogeneous Disk Array <i>András Fekete, Elizabeth Varki</i>	37
Modify Bayesian Network Structure with Inconsistent Constraints <i>Yi Sun, Yun Peng</i>	43
IEEE754 Floating Point Bound Intervals for static analysis of JavaScript Programs <i>Astrid Younang, Lunjin Lu</i>	49
Control Systems & Distributed Systems	55
Minimizing Averaged Error For Dynamic Matrix Control <i>Samer Mansour, Jalal Karam</i>	55
Digital Control of PWM Systems for LED Application Using One-Cycle Averaging <i>Mohammed S. Al-Numay</i>	59
An Emergency Message Propagation System Using Roadside Units and Vehicle-To-Vehicle Communication <i>Besat Zardosht, Steven S. Beauchemin, Michael A. Bauer</i>	65
Levenberg-Marquadt Algorithm tuned Gradient Descent-based Model Reference Adaptive Control Scheme <i>Ka C Cheok, Ana Farhat, Sangeetha Prakasam, Narendra Kintali</i>	73
Adaptive Cost Optimization and Fair Resource Allocation in Computational Grid Systems <i>Satish Penmatsa, Gurdeep S. Hura</i>	79
Computer Security	85
Verifying SCADA Security in Industrial Control Systems <i>Mehdi Sabraoui, Jeff Hieb, James Graham</i>	85
An Information Security Framework for Services of M-Government from Peruvian Local Governments <i>Manuel Tupia, Mariuxi Bruzza</i>	91

A Prototype Development of a Declarative Approach for Computer System Security <i>Yun Bai, Edward Caprin, Yan Zhang</i>	99
Weightage Based Clustering for Energy Efficient Mobile Data Offloading <i>Parag Kumar Guha Thakurta, Spandan Chowdhury, Arun Pandey, Swapan Bhattacharya, Subhansu Bandyopadhyay</i>	105
Computers in Education	111
A Scientific Approach to Chinese Characters: Rationale, Ontology and Application <i>Antoine Bossard, Keiichi Kaneko</i>	111
Visualization for Database Algorithms <i>Ying Jin, Vijetha Ramu</i>	117
Undergraduate Research and Experiments in Robotics-Based Accomplishments for STEM Education <i>Seung-Yun Kim, Reza Mirdamadi, Osman Guzide</i>	123
Co-Curricular Activities for Soft Skills and Underserved Minority Student Success <i>Meline Kevorkian, Greg Simco</i>	129
Computer Networks	133
A Cyber-Robust Connected Control System: Experimental Validation <i>Charles Kim, Ravindranath Jaglal</i>	133
Cybersecurity Testbed Experimentation of a Resilient Control System for Power Substations <i>Charles Kim, Karen Green, Andre Duarte Palhares</i>	139
Methods to Improve Capacity in Grid Networks <i>Amalya Mihnea, Mihaela Cardei</i>	145
Combining Host and Network-based Intrusion Detection System to Mitigate Insider Threat <i>Ajay K Katangur, Somashekar Akkaladevi, Dulal Kar</i>	151
A Comparative Evaluation of Trust Models in P2P Networks <i>Wei Li</i>	159
Human-Computer Interface & Image/Signal Processing	165
A Unified Approach for Arabic Language Dialect Detection <i>Rania R. Ziedan, Michael N. Michael, Abdulwahab K. Alsammak, Mona F.M. Mursi, Adel S. Elmaghraby</i>	165
Development of Breast Abnormality Detection System with Colors Based on the Wavelet Decomposition Technique <i>Maha Ali, Magdi B. M. Amien</i>	171
A Study of Scientific Application Interfaces and a Proposed GUI for Brain Signal Processing <i>Catherine Stringfellow, Tina Johnson, Richard Simpson, Michael Grayson, Michael Ellerkamp, Ali Khalid, Uri Easter, Cavaughn Browne</i>	179
An HCI Study on I/O Devices using Hand-Eye Coordinated Tasks <i>Rojin Aliehyaei, Angkul Kongmunvattana</i>	185
Data Mining	191
Parallel K-Means Clustering with Triangle Inequality <i>Rachel Krohn, Christer Karlsson</i>	191
Knowledge Discovery Using Unsupervised Learning Techniques: A Case Study on Canadian Crime and Income Data <i>Neil Hanak, Mitchell Koens, Kevin Saforo, Mohamad El-Hajj</i>	197
A Graph-based Patent Evolution Model using Summarization and Patent Relationships <i>Lun-Chi Chen, Yu-Chiu Chen, Jyun-Yao Huang, I-En Liao</i>	203
Infrastructure and Comparative Analysis of Stock Price Forecasting Techniques <i>Antonio M.H. Punzo, Ower M. Rosier, George Dimitoglou</i>	211
Sentiment Analysis of Tweets on 2016 US Presidential Election Candidates <i>Gongzhu Hu, Snehitha Kodali, Anusha Padamati</i>	219

Computer Architecture, Mobile, Scientific Computing	227
Parallelizing Genetic Algorithms with GPGPU	
<i>John Weiss</i>	227
Discussion of RAMCloud Storage Based on NUMA Architecture	
<i>Jian Zhang, Mei Wang, Huanmei Wu</i>	233
NUMA Memory Arrangement by Using BW-SA	
<i>Jian Zhang, Mei Wang, Huanmei Wu</i>	239
Improvement and Implementation of Interactive Graph Cut Algorithm	
<i>Zhiyi Fang, Wenzeng Huang, Yukang Tian, Cheng Ding</i>	245
Access Control Model of Enterprise Instant Messaging System Based on RSA	
<i>Xiaoyun Liu, Zhiyi Fang, Xinda You, Xiaoyue Liu</i>	251
Author Index	255