SoutheastCon 2016

Norfolk, Virginia, USA 30 March – 3 April 2016



IEEE Catalog Number: CFP16SEC-POD ISBN: 978-1-5090-2247-2

Copyright © 2016 by the Institute of Electrical and Electronics Engineers, Inc All Rights Reserved

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

***This publication is a representation of what appears in the IEEE Digital Libraries. Some format issues inherent in the e-media version may also appear in this print version.

 IEEE Catalog Number:
 CFP16SEC-POD

 ISBN (Print-On-Demand):
 978-1-5090-2247-2

 ISBN (Online):
 978-1-5090-2246-5

ISSN: 1091-0050

Additional Copies of This Publication Are Available From:

Curran Associates, Inc 57 Morehouse Lane Red Hook, NY 12571 USA Phone: (845) 758-0400

Fax: (845) 758-2633 E-mail: curran@proceed

E-mail: curran@proceedings.com Web: www.proceedings.com



Southeastcon 2016 Program

Page:

Title - Paper ID

Paper Track A1 - Applications and Interdisciplinary

Transdisciplinary Convergence – A Vital Consideration in Engineering Solutions - 101 Darrell Fielder, UAB (United States); Urcun Tanik, Texas A&M University-Commerce (United States); Cristiane Gattaz, Centro Univeritario FEI (Brazil); Murat Tanik, University of Alabama at Birmingham (United States); Fuad Sobrinho, Birmingham Software Engineering Society - SES and Universidade (Brazil)

"Sense and Avoid" – What's required for aircraft safety? - 26

Ron Ogan, IEEE Aerospace & Electronic Systems Society (United States); Mark Olive, Garmin (United States); David Haessig, New Jersey Institute of Technology (United States)

Implementing an Arc-Length Method for a Robust Approach in Solving Systems of Nonlinear Equations - 68

Geoffrey Rose, NASA (United States); Duc Nguyen, Old Dominion University (United States); Brett Newman, Old Dominion University (United States)

Paper Track A2 - Applications and Interdisciplinary

A Novel Data Logging Framework to Enhance Security of Cloud Computing - 85

Abu Asaduzzaman, Wichita State University (United States); Jainish Rajesh Jain, Wichita State University (United States)

Applications of Electro-Hydraulics Actuators - 152

Vukica Jovanovic, Old Dominion University (United States); Ana Djuric, Wayne State University (United States); Velibor Karanovic, University of Novi Sad (Serbia); Branislav Stevanov, University of Novi Sad (Serbia)

A Mobile EMF Sensor for Appliance Identification - 131

Anand Kulkarni, University of Louisville (United States); Karla Welch, University of Louisville (United States)

Analysis of Centralized and Decentralized Cloud Architectures - 156

Renuka Prasad Pasupulati, University of South Alabama (United States); Jordan Shropshire, University of South Alabama (United States)

Paper Track A3 - Big Data and Warehouse Architecture

Integrating MapReduce Concepts into Core CS Curricula - 70

Weiwei Ge, University of North Carolina at Charlotte (United States); **David John**, Wake Forest University (United States); Stan Thomas, Wake Forest University (United States)

An Empirical Analysis of Feature Engineering for Predictive Modeling - 11 *Jeff Heaton*, Nova Southeastern University (United States)

Comparing Dataset Characteristics that Favor the Apriori, Eclat or FP-Growth Frequent Itemset Mining Algorithms - 12

Jeff Heaton, Nova Southeastern University (United States)

Boosting Heapsort Performance of Processing Big Data Streams - 149 *Usamah Algemili*, *GWU (United States)*; *Adi Alhudhaif*, *(United States)*

Paper Track A4 - Devices and Optics

Surface Plasmon Polaritons Excited By Electromagnetic Waves - 124 **Bill Yang**, Western Carolina University (United States); Michael Fiddy, University of North Carolina at Charlotte ()

An Experimental Study of InGaAs Photovoltaic Cell to Solar Exposure in Outer Space Environment - 177

Jason Harris, Old Dominion University (United States); Dimitrie Popescu, Old Dominion University (United States); Christopher Bailey, Old Dominion University (United States)

Paper Track A5 - Simulation, Game and Social Technology

A Knowledge Management System (KMS) Using a Storytelling-based Approach to Collect Tacit Knowledge - 51

Nicholas Shaw, Defense Commissary Agency, Information Technology (United States); **Peixiang** Liu, Nova Southeastern University (United States)

Code Puzzles – Robot Chronicle - 97

Breeana Nikaido, Christian Brothers University (United States); John Ventura, Christian Brothers University (United States)

How the Internet of Things Affects the Premises in Geekonomics - 17 *Leoncio Estevez-Reyes*, *Carnegie Mellon University (United States)*

An Approach to Develop Students Experience and Knowledge in Rocket Propulsion and Support Systems - 21

Ilteris Demirkiran, ERAU (United States); Taylor Moberly, (United States); Wesley Gillman, (United States); Adam Joseph, (United States)

Paper Track A6 - Bioengineering and Bioinformatics

Distance-based Outliers Method for Detecting Disease Outbreaks using Social Media - 64 *Xiangfeng Dai*, (United States); Marwan Bikdash, North Carolina A&T State University (United States)

A Multiuser EEG Based Imaginary Motion Classification Using Neural Networks - 195 Sylvia Bhattacharya, Georgia Southern University (United States); Rami Haddad, Georgia

Southern University (United States); Mohammad Ahad, Georgia Southern University (United States)

Golay Code Classifier Approach for Medical Diagnosis - 150 Faisal Alsaby, The George Washington University (United States)

Paper Track A7 - Control and Automation

Auxiliary Signal Design for Failure Detection with Initial Prior Information - 44

Stephen Campbell, North Carolina State University (United States); Jason Scott, (United States)

A Design to Improve Selective Catalytic Reduction for Diesel Engines - 19

**Ilteris Demirkiran*, ERAU (United States); Sun Ye, (United States); Anuj Sharma, (United States); Amay Desai, (United States); Kurt Pedrosa, (United States); Marc Compere, (United States)

Actuator Effects on Auxiliary Signal Design for Failure Detection - 58

Stephen Campbell, North Carolina State University (United States); Hailey Owen, North Carolina Satate University (United States)

Application of An Event-Triggered Distributed Estimation Algorithm in a Simple Multi-agent Flocking Model - 74

Thomas Yang, Embry-Riddle Aeronautical University (United States); **Zhaoyang Fu**, Embry-Riddle Aeronautical University (United States); Jing Wang, Bradley University (United States)

Paper Track A8 - Control and Automation

Implementation of a Cartesian Robot for Remote Mission Critical Operator Training - 174 *Aidan Browne*, UNC Charlotte (United States); Wesley Williams, UNC Charlotte (United States); Keith Loftus, UNC Charlotte (United States); Cameron Nye, UNC Charlotte (United States)

Development of a Remote Laboratory Architecture for Mission Critical Operations Instruction - 199

Wesley Williams, UNC Charlotte (United States); Aidan Browne, UNC Charlotte (United States)

Paper Track B1 - Communications and Networking

Classification of Digital Modulation Schemes in Multipath Environments Using Higher Order Statistics - 69

Meena Sreekantamurthy, Old Dominion University (United States); Dimitrie Popescu, Old Dominion University (United States); Ravindra P. Joshi, Texas Tech University (United States)

Open Source Cloud Management Platforms and Hypervisor Technologies: A Review and Comparison - 18

David Freet, (United States); Rajeev Agrawal, North Carolina Agricultural & Technical State

University (United States); Jessie Walker, University of Arkansas, Pine Bluff (United States); Youakim Badr, (France)

Smart Parking: Parking Occupancy Monitoring and Visualization System for Smart Cities - 23 *Robin Grodi*, *Georgia Southern University (United States)*; *Danda Rawat, Georgia Southern University (United States)*; *Fernando Rios-Gutierrez, Georgia Southern University (United States)*

Adaptive Threshold based Combined Energy and Spectrum-width Detection for RF Channel Sensing in Cognitive Networks using USRP B200 GNU Radios: An Experimental Study - 31 Ashraf Younis, GSU (United States); Isaac Cushman, Georgia Southern University (United States); Danda Rawat, Georgia Southern University (United States); Bhed Bista, Iwate Prefectural University (Japan)

SDX Architectures: A Qualitative Analysis - 59

Joaquin Chung Miranda, Georgia Institute of Technology (United States); Russel Clark, Georgia Institute of Technology (United States); Henry Owen, Georgia Institute of Technology (United States)

Paper Track B2 - Communications and Networking

Designing the Communication Sub-System for Nanosatellite CubeSat Missions: Operational and Implementation Perspectives - 71

Otilia Popescu, Old Dominion University (United States); Jason Harris, Old Dominion University (United States); Dimitrie Popescu, Old Dominion University (United States)

A Small Network for Modeling MPLS - 76

Walter Thain, Kennesaw State University (United States); Jeffrey Cole, Acute Systems, LLC (United States)

Paper Track B3 - Communications and Networking

Wireless Network Virtualization for Enhancing Security: Status, Challenges and Perspectives - 90

Danda Rawat, Georgia Southern University (United States); **Nimish Sharma**, GSU (United States)

Advances on Software Defined Wireless Networking - 91

Danda Rawat, Georgia Southern University (United States); **Swetha Reddy**, GSU (United States)

Security Issues on Cognitive Radio Networks: A Survey - 176

Sterling Holcomb, Georgia Southern University (United States); Danda Rawat, Georgia Southern University (United States)

Comparative Study of Connected Vehicle Simulators - 186

Md Salman Ahmed, East Tennessee State University (United States); Mohammad Hoque, East Tennessee State University (United States); Phil Pfeiffer, East Tennessee State University (United States)

Paper Track B4 - Nanotechnology and Materials

Invar Thin Films for MEMS Bistable Devices - 122

Dilan Ratnayake, University Of Louisville (United States); Kevin Walsh, University of Louisville (United States)

A Review of Cathode and Anode Materials for Lithium-Ion Batteries - 139

Yemeserach Mekonnen, Florida International University (United States); Aditya Sundararajan, Florida International University (United States); Arif Sarwat, Florida International University (United States); Arash Khalilnejad, Florida International University (United States)

Paper Track B5 - Cybersecurity & Information Assurance

Behavioral Cybersecurity: A Needed Aspect of the Security Curriculum - 88

Wayne Patterson, Howard University (United States); Lorraine Fleming, Howard University (United States); Cynthia Winston, College of Arts and Sciences (United States)

Leveraging SDN for ARP Security - 10

Jacob Cox, Georgia Institute of Technology (United States); Russel Clark, Georgia Institute of Technology (United States); Henry Owen, GA Tech ()

Building a Hacking Site for Learning and Student Engagement - 54 *Michael Lehrfeld*, East Tennessee State University (United States)

Improving the Performance of Self-Organizing Maps for Intrusion Detection - 87 **Steven McElwee**, Nova Southeastern University (United States); James Cannady, Nova Southeastern University (United States)

A Hybrid Approach to Reducing the False Positive Rate in Unsupervised Machine Learning Intrusion Detection - 98

Angela Landress, Nova Southeastern University (United States)

Paper Track B6 - Cybersecurity & Information Assurance

Golden Reference Library Matching of Structural Checking for Securing Soft IPs - 43 Lucas Weaver, (United States); Thao Le, (United States); Jia Di, University of Arkansas (United States); Lucas Weaver, University of Arkansas (United States)

REDUCING FALSE POSITIVES IN INTRUSION DETECTION SYSTEMS USING DATA-MINING TECHNIQUES UTILIZING SUPPORT VECTOR MACHINES, DECISION TREES,

AND NAIVE BAYES FOR OFF-LINE ANALYSIS - 99

Kathleen Goeschel, Nova Southeastern University (United States)

Internet of Things: A Useful Innovation or Security Nightmare? - 128 *Mohammed Ketel*, *University of Baltimore (United States); Devon Scott, University of Baltimore (United States)*

A Diversity Defense for Cloud Computing Systems - 158 Jordan Shropshire, University of South Alabama (United States); Renuka Prasad Pasupulati, University of South Alabama (United States)

Paper Track B7 - Cybersecurity & Information Assurance

Network Security Analysis Using Big Data Technology - 167 Yogeshwar Bachupally, (United States); Xiahong Yuan, North Carolina A&T State University (United States); Kaushik Roy, North Carolina A&T State University (United States)

Polymorphic Malware Detection Using Feature Extraction with Data Mining - 166

James Fraley, Nova Southeastern University (United States); Marco Figeroa, Intel Security (United States)

Coping with Denial-of-Service Attacks on the IP Telephony System - 172 Frantz Cadet, The University of the West Indies, Mona (Jamaica); **Daniel Fokum**, University of the West Indies (Jamaica)

Analysis of Digital Forensics Live System Acquisition Methods to Achieve Optimal Evidence Preservation - 196

Josh Jones, Computer Science Department, University of Alabama in Huntsville (United States); Letha Etzkorn, (United States)

Paper Track B8 - Health Informatics and Healthcare

Simulating Multisensor Noninvasive Blood Glucose Monitoring Systems - 86

Abu Asaduzzaman, Wichita State University (United States); Soumyashree Samadarsinee,
Wichita State University (United States); Kishore Chidella, Wichita State University (United States)

Performance Analysis of Two ANN Based Classifiers for EMG Signals to Identify Hand Motions - 72

Rocio Alba-Flores, Georgia Southern University (United States); Stephen Hickman, Georgia Southern University (United States); Arash Shawn Mirzakhani, Georgia Southern University (United States)

Paper Track C1 - Power and Sustainable Energy

Simulation of PEV Service Admission Control (PEVSAC) Model for Smart Grid Using MATLAB - 35

Khaled Shuaib, College of IT, UAEU (United Arab Emirates); Farag Sallabi, (United Arab Emirates); Nedaa Al Hussien, (United Arab Emirates); Mohammed Abdel-Hafez, (United Arab Emirates)

Long Term Reliability Analysis of Components of Photovoltaic System based on Markov Process - 82

Arash Khalilnejad, Florida International University (United States); Maneli Malek pour, Florida International University (United States); Elahe Zarafshan, Florida International University (United States); Arif Sarwat, Florida International University (United States)

An Efficient Simulation Method Using VisualSim to Assess Autonomous Power Systems - 84 *Abu Asaduzzaman*, *Wichita State University (United States); Md Moniruzzaman, Wichita State University (United States); Kishore Chidella, Wichita State University (United States); Perlekar Tamtam, Wichita State University (United States)*

Comparison of IGBT Modules - Focus on High Power Systems - 110 Felipe Sozinho, West Virginia University Institute of Technology (United States); **Kenan Hatipoglu**, West Virginia University Institute of Technology (United States)

Optimizing Power System Losses using Quadrature Boosters on the IEEE 30-Bus Test System - 3

Sandeep Sadanandan, (United States); Ghadir Radman, Tennessee Tech University (United States)

Paper Track C2 - Power and Sustainable Energy

LAA-Based LTE and ZigBee Coexistence for Unlicensed-Band Smart Grid Communications - 20

Imtiaz Parvez, Florida International University (United States); Nasidul Islam, Florida International University (United States); Nadisanka Rupasinghe, Florida International University (United States); Arif Sarwat, Florida International University (United States); Ismail Guvenc, Florida International University (United States); Arash Khalilnejad, Florida International University (United States)

An Overview of Hydrogen Electrical Energy Storage - Meeting Energy Demand with Intermittent Renewable Resources - 125

Barrett Lynch, West Virginia University Institute of Technology (United States); Adam Kiger, West Virginia University Institute of Technology (United States); **Kenan Hatipoglu**, West Virginia University Institute of Technology (United States)

A Real-time Circuit Topology for Battery Impedance Monitoring - 216 Christopher Lashway, Florida International University (United States); Geraldson Constant, (United States); Junior Theogene, Florida International University (United States); Osama Mohammed, Florida International University (United States)

Higher Education Building Efficient Electrical Design - 215

Matthew Cobb, (United States); Nathan Justin, (United States); Adel El Shahat, Georgia Southern University (United States); Rami Haddad, Georgia Southern University (United States)

Paper Track C3 - Power and Sustainable Energy

Forced Redundant States of 5-Level Single-Phase Diode-Clamped Multilevel Inverters - 112 Manoj Chaulagain, Kennesaw State University (United States); **Bill Diong**, Kennesaw State University (United States)

Single Axis Solar Tracker Actuator Location Analysis - 140

Vukica Jovanovic, Old Dominion University (United States); Orlando Ayala, Old Dominion University (United States); Michael Seek, Old Dominion University (United States); Sylvain Marsillac, Old Dominion University (United States)

Analysis of Large Scale Photovoltaic Power System Integration into the Existing Utility Grid Using PSAT - 145

Daniel Noel, West Virginia University Institute of Technology (United States); Felipe Sozinho, West Virginia University Institute of Technology (United States); Dwight Wilson, West Virginia University Institute of Technology (United States); **Kenan Hatipoglu**, West Virginia University Institute of Technology (United States)

EMS Control of Reduced Energy Storage Capacity for Ramp Rate Support to Improve Frequency Regulation in Islanded Microgrid - 189

Dwight Reid, University of Technology Jamaica (Jamaica)*

Application of Renewable Energy A Jamaican Private Residence Investigation - 191 *Juma Stewart, University of Technology (Jamaica); Therese Chambers, (Jamaica)*

Paper Track C5 - Robotics and Computer Vision

Omnidirectional Locomotion Control of a Pendulum Driven Spherical Robot - 106 Narendran Muraleedharan, Embry-Riddle Aeronautical University (United States); Daniel Cohen, ERAU (United States); **Douglas Isenberg**, Embry-Riddle Aeronautical University (United States)

SDA-Based Neural Network Approach to Digit Classification - 9

Travis Williams, North Carolina A&T State University (United States); Robert Li, North Carolina A&T State University (United States)

Deep SRN for Robust Object Recognition: A Case Study with NAO Humanoid Robot - 63 *Mahbubul Alam, Old Dominion University (United States); Lasitha Vidyaratne, Old Dominion*

University (United States); Tucker Wash, Old Dominion University (United States); Khan Iftekharuddin, Old Dominion University (United States)

Control of Systems with Pfaffian Constraints: Motivation for Kane's Formulation - 164 *Douglas Isenberg*, *Embry-Riddle Aeronautical University (United States)*

Micro-Dimensional Feature Extraction for Multispectral Iris Recognition - 117 John Jenkins, NC A&T SU (United States); Kaushik Roy, North Carolina A&T State University (United States); Joseph Shelton, North Carolina A&T State University- NCAT (United States)

Paper Track C6 - Geosciences and Remote Sensing

Simulated Rock Profiles for Surface Weathering Estimation - 73

Mason McGough, University of Florida (United States); Jason Gutel, University of Florida
(United States); Nick Hudyma, University of North Florida (); Alan Harris, University of North
Florida (United States); Patrick Kreidl, University of North Florida ()

Maximizing Harmonic-Radar Target Response: Duty Cycle vs. Peak Power - 29

Gregory Mazzaro, The Citadel (United States); Anthony Martone, U. S. Army Research

Laboratory (United States); Kyle Gallagher, Pennsylvania State University (United States); Ram

Narayanan, Pennsylvania State University (United States); Kelly Sherbondy, U. S. Army

Research Laboratory (United States)

User-customized Graphical User Interface (GUI) Tool for Remotely Sensed Image Processing for Improved Seafloor Mapping - 121

Hyun Jung Cho, Bethune-Cookman University (United States); Shizhen Huang, Embry-Riddle Aeronautical University (United States)

Paper Track C7 - Robotics and Computer Vision

A Survey on Robot Localization in Extraterrestrial Environments - 175

Gautam Gautam, UNC Charlotte (United States); Sanjay Katragadda, UNC Charlotte (United States); Sandesh Kesarla Nagaraja Gupta, UNC Charlotte (United States); James Conrad, UNC Charlotte (United States); Aidan Browne, UNC Charlotte (United States)

Enhanced Model for Laser Localization System - 188

David Vutetakis, UNC Charlotte (United States); Aidan Browne, UNC Charlotte (United States)

Comparison Between Newton-Euler and Automatic Separation Method for SCARA Dynamic Modeling - 197

Ana Djuric, Wayne State University (United States); Vukica Jovanovic, Old Dominion University (United States); Mirjana Filipovic, Mihajlo Pupin Institute, University of Belgrade (Serbia); Ljubinko Kevac, Innovation center, School of Electrical Engineering, University of Belgrade (Serbia)

Sonar Sensor Virtualization For Object Detection And Localization - 181 MD HOSSAIN SHUVO, ALABAMA A&M UNIVERSITY (United States); Yujian Fu, Alabama A&M University (United States)

Sensor Fusion Using a Selective Sensor Framework to Achieve Decision and Task Execution - 205

Balasubramaniyan Chandrasekaran, (United States); James Conrad, UNC Charlotte (United States)

Paper Track C8 - Computer Vision and Microwaves

Radar Cross Section of Subsurface Objects under Tapered Wave Illumination - 198

Ang Yu, Howard University (United States); Ayobami Idubor, Howard University (United States); Mihai Dimian, Howard University (United States)

Reduction of Impact Force in Falling Robots Using Variable Stiffness - 206 *Juan Calderon*, *University of South Florida (United States); Gustavo Andres Cardona, (Colombia)*

Paper Track D1 - Software Engineering

New Metrics for Assessing Aspect Coupling - 24

Brian Bennett, East Tennessee State University (United States); Frank Mitropoulos, Nova
Southeastern University (United States)

Hungarian Optimum Assignment Algorithm with Java Computer Animation - 37 *Ivan Makohon*, *Old Dominion University (United States); Mecit Cetin, Old Dominion University (United States); Manwo Ng, Old Dominion University (United States); Duc Nguyen, Old Dominion University (United States)*

Web-based Integrated Development Environment for Event-Driven Applications - 103 Hakan Tunc, Vanderbilt University (United States); Addisu Taddese, (United States); Peter Volgyesi, (United States); Janos Sallai, (United States); Pietro Valdastri, (United States); Akos Ledeczi, (United States)

Leveraging microservices architecture by using Docker technology - 104 **Duy Nguyen**, IBM CIO Office (United States); David Jaramillo, IBM CIO (United States);

Robert Smart, IBM Emerging Technology Services ()

Paper Track D2 - Software Engineering

Projects By Design: A Template - 193
Susan Reiser, UNC Asheville (United States); Rebecca Bruce, UNC Asheville (United States)

Context-Aware Architecture utilizing Computing with Words and ISO/IEC/IEEE 42010 - 111 *Asesh Das, Pennsylvania College of Technology - Pennsylvania State University (United States)*

N-Queens Solving Algorithm by Sets and Backtracking - 169 Serkan Guldal, (United States); Veronica Baugh, (United States); Saleh Allehaibi, University of Alabama at Birmingham (United States)

Genetic Attraction Force and Physical Gene Search - 173

Stevo Bozinovski, South Carolina State University (United States); Nevena Ackovska, Faculty of Computer Science and Engineering (Macedonia); Liljana Bozinovska, South Carolina State University ()

Paper Track D3 - Instrumentation and Measurements

Noise analysis methodology for a dual-diaphragm medical device air pump - 161 Aidan Browne, UNC Charlotte (United States); Andrew Paustian, UNC Charlotte (United States)

Real Time Range Tracker (RTRT): Range Accuracy Performance - 25

Sean Fursdon, SPAWARSYSCEN Atlantic (United States); Christine Madden, Kenworth (United States)

An Autonomous, Small Scale Temperature Mapping Data-Logger for Automated Manufacturing Applications - 120

Ahmed Tawfik, University of North Florida (United States); Juan Aceros, University of North Florida (); Brian Kopp, UNF IEEE Student Branch (United States)

Paper Track D4 - Sensor Networks

Efficient Regional Information Dissemination Protocol for Intermittently Connected Mobile Wireless Sensor Networks - 53

Ying Li, COLBY COLLEGE (United States); Radim Bartos, (United States)

On Wireless Video Sensor Network Deployment for 3D Indoor Space Coverage - 52 **Tisha Brown**, University of Mississippi (United States); Zhonghui Wang, University of Mississippi (United States); Tong Shan, University of Mississippi (United States); Feng Wang, University of Mississippi (United States); Jianxia Xue, Google (United States)

Paper Track D5 - Signal and Image Processing

Fast Online Algorithm for Support Vector Machines - 39 Gabriella Melki, Virginia Commonwealth University (United States); Vojislav Kecman, Virginia Commonwealth University (United States)

Speeding Up Online Training of L1 Support Vector Machines - 38

Gabriella Melki, Virginia Commonwealth University (United States); Vojislav Kecman, Virginia Commonwealth University (United States)

A Web Platform for Data Acquisition and Analysis for Neurological Disorders - 36 *Gabriel Lizarraga*, Florida International University (United States); Mercedes Cabrerizo, Florida International University (United States); Niovi Rojas, Florida International University (United States); Malek Adjouadi, Florida International University (); Ranjan Duara, (United States); David Loewenstein, Mount Sinai Medical Center (United States)

EVALUATION OF THE BIASED RUN-LENGTH CODING METHOD ON BINARY IMAGES GENERATED BY A MODIFIED ISING MODEL - 119

Amir Liaghati, The Boeing Company (United States); W. David Pan, University of Alabama in Huntsville (United States)

Fast Golomb Coding Parameter Estimation Using Partial Data and Its Application in Hyperspectal Image Compression - 130

W. David Pan, University of Alabama in Huntsville (United States); Hongda Shen, University of Alabama in Huntsville (United States); Dongsheng Wu, Department of Mathematical Sciences (); Maliha Lubna, Dept. of Ind. & Syst. Eng. Manag., UAH (United States)

Paper Track D6 - Signal and Image Processing

An Efficient Hybrid Fourier-Wavelet Neighborhood Coefficient Image Denoising Approach - 8 *Travis Williams*, North Carolina A&T State University (United States); Robert Li, North Carolina A&T State University (United States)

Transmission of Digital Information over Cell Phone Audio Channels - 179 *Jason Granstedt*, (United States)

Time-Domain Modeling of the Effect of Atmospheric Attenuation on the Outdoor Propagation of an Acoustic Pulse - 212

DANIEL OCANSEY, NORTH CAROLINA A&T STATE UNIVERSITY (United States); Marwan Bikdash, North Carolina A&T State University (United States)

Paper Track D7 - Embedded Systems

Design and Implementation of a Semi-Autonomous Waste Segregation Robot - 153

James Conrad, UNC Charlotte (United States); Balaji Masanamuthu Chinnathurai, (United States); Ramakrishnan Sivakumar, University of North Carolina at Charlotte (United States); Sushuruth Sadagopan, University of North Carolina at Charlotte (United States); Sam Shue, University of North Carolina at Charlotte (United States)

Simulation and Measurement of an Internet of Things Implementation of a Programmable Digital Inductor - 190

Tyler Major, UNC Charlotte (United States); **James Conrad**, UNC Charlotte (United States); Pranay Shekhar Kona, UNC Charlotte (United States); Tom Weldon, UNCC ()

Integrating Open TCP/IP Core and FPGA-based Cryptosystem on Chip - 55

**Rami Amiri*, Saint Cloud State University (United States); Omar Elkeelany, Tennessee Tech University (United States)

Poster Presentations

Extending Sensor Network Lifetime via Wireless Charging Vehicle with an Efficient Routing Protocol - 28

Shuo-Han Chen, National Tsing Hua University (Taiwan); Yu-Chun Cheng, (Taiwan); Chi-Heng Lee, (Taiwan); Tseng-Yi Chen, (Taiwan); Heng-Yin Chen, (Taiwan); Sheng-Po Wang, (Taiwan); Hsin-Wen Wei, (Taiwan); **Wei-Kuan Shih**, (Taiwan)

Development of Navigation Software System for Obstacle Avoidance in a Dynamic Environment - 2

Maged Mikhail, Purdue university Calumet (United States); Nathan Carmack, (United States)

Impact of Retrofitted CPU Water Cooling on Supercomputer Performance and Power Consumption - 14

Seppo Ovaska, Aalto University (Finland); Roy Dragseth, UiT The Arctic University of Norway (Norway); Svenn Hanssen, Uit The Arctic University of Norway (Norway)

Design and Implementation of an Eye Blinking Detector System for Automobile Accident Prevention - 40

Tariq Jamil, Sultan Qaboos University (Oman); Iftaquaruddin Mohammed, Sultan Qaboos University (); Medhat H. Awadalla, Sultan Qaboos University (Oman)

Dry-type transformer optimization using high performance cloud computing: performance evaluation - 46

Wei Wu, ABB Inc. (United States); Wolfgang Gentzsch, UberCloud (United States); Joel Kern, ABB Inc. (United States)

Temperature rise prediction of a natural cooling dry-type transformer - 50 *Wei Wu*, *ABB Inc. (United States)*; *Joel Kern, ABB Inc. (United States)*

A Toolkit for Presenting Advanced Mathematics in Serious Games - 168

Katherine Smith, Old Dominion University (United States); Yuzhong Shen, Old Dominion

University (United States); John Shull, Old Dominion University (United States); Tony Dean,

Old Dominion University (United States); Jennifer Michaeli, Old Dominion University (United States)

Wired logic for control: An inverters-only latch - 60

Stevo Bozinovski, South Carolina State University (United States); Adrijan Bozinovski, University American College Skopje (Macedonia)

Characterization of Sputtered CuO Thin Films - 100 *Radu Bunea*, *Valencia College (United States)*

Novel H.265 Video Traffic Prediction Models Using Artificial Neural Network - 202 *Collin Daly, (United States); Rami Haddad, Georgia Southern University (United States); Adel El Shahat, Georgia Southern University (United States)*

A Tool Set for Managing Virtual Network Configurations - 42

Lem Soles, University of West Florida (United States); Thomas Reichherzer, University of West Florida (United States); Dallas Snider, University of West Florida (United States)

A Process to Transfer Fail2ban Data to an Adaptive Enterprise Intrusion Detection and Prevention System - 96

Dallas Snider, University of West Florida (United States); Mike Ford, University of West Florida (United States); Cody Mallery, University of West Florida (United States); Frank Palmasani, University of West Florida (United States); Michael Rabb, University of West Florida (United States); Reid Turner, University of West Florida (United States); Lem Soles, University of West Florida (United States)

Software Defined Networking for Reducing Energy Consumption and Carbon Emission - 183 **Danda Rawat**, Georgia Southern University (United States); Chandra Bajracharya, Georgia Southern University (United States)

Simulation of a Microstrip Bandstop Filter Having an Equivalent T-Shaped Line - 45 *Shujun Yang*, Dept of Electrical Engineering, Alabama A&M University (United States)

Simulation of a Compact Dual-Band Microstrip Bandstop Filter Having Three Spurlines - 47 *Shujun Yang*, *Dept of Electrical Engineering, Alabama A&M University (United States)*

Matlab Model of Heintzmann and Cremer's Super Resolution Techique - 142 William McCray, (United States); Mesfin Woldeyohannes, (United States); Weiguo Yang, Western Carolina University (United States); William McCray, Western Carolina University (United States)

An Unbalanced, Electrically Small Tag Antenna for Passive UHF RFID - 151

Jinxi Chen, Georgia Southern University (United States); Sungkyun Lim, Georgia Southern

University (United States)

A Wideband, Planar Bow-tie Antenna - 159

Yen B. Le, Georgia Southern University (United States); **Sungkyun Lim**, Georgia Southern University (United States)

Hybrid High Voltage AC/DC System for Interfacing Off-shore Power Generations with Onshore Grid - 194

H M Mesbah Maruf, University of North Carolina at Charlotte (United States); **Bhaskar Mitra**, University of North Carolina at Charlotte (United States); Prasanth Kumar Sahu, University of North Carolina at Charlotte (United States); Madhav Manjrekar, University of North Carolina at Charlotte (United States); Badrul Chowdhury, UNC Charlotte (United States)

INTEGRATION OF INTRUSION DETECTION AND WEB SERVICE ALARM for HOME AUTOMATION SYSTEM USING 'ARM' MICROPROCESSOR - 207

Balakrishna Gokaraju, The University of West Alabama (United States); Donald Yessick, The University of West Alabama (United States); Daniel Doss, The University of West Alabama (United States); Anish Turlpaty, VR Siddhartha Engineering College (India); Jonathan Steele, University of West Alabama (United States)

Effect of Radio Frequency Waves on Technological Plasma - 30 *Sudip Sen*, (United States)

Printed Spiral Multi-Coil Based Inductive-Power-Link for Wireless Sensor Applications - 109 *Qingyun Ma, University of Alabama at Birmingham (United States); Mohammad Haider, University of Alabama at Birmingham (United States)*

Author Identification using Sequential Minimal Optimization - 114

John Jenkins, NC A&T SU (United States); William Nick, North Carolina A&T State University Computer Science Department (United States); Kaushik Roy, North Carolina A&T State University (United States); Albert Esterline, NCAT (United States); Joel Bloch, (United States)

The Comparative Analysis of Performance of Hub with Switch Local Area Network (LAN), Using Riverbed in University of Technology (Utech), Jamaica - 115 *Christopher Udeagha*, *University of Technology*, *Jamaica*. (*Jamaica*)

Genetic based Local Ternary Pattern Feature Extraction for Mitigating Replay Attacks - 116 *John Jenkins*, NC A&T SU (United States); Kaushik Roy, North Carolina A&T State University (United States); Alex sumner, (United States); Joseph Shelton, North Carolina A&T State University- NCAT (United States)

Network Traffic Classification for Security Analysis - 133

Mark Boger, (United States); Tianyuan Liu, (United States); Jacqueline Ratliff, (United States); William Nick, North Carolina A&T State University Computer Science Department (United States); Xiahong Yuan, North Carolina A&T State University (United States); Albert Esterline, NCAT (United States)

Group Access Control using WebID - 143

Cory Sabol, University of North Carolina at Greensboro / North Carolina A&T State University (United States); Albert Esterline, NCAT (United States); Wesley Odd, NC A&T State University (United States)

Implementation of an Internal Food Traceability Application for Local Farmers in Jamaica - 171 Stacy-Ann Anuli, (Jamaica); **Daniel Fokum**, University of the West Indies (Jamaica)

Extensions and Enhancements for the DANNA Neuromorphic Architecture - 184 *Christopher Daffron, University of Tennessee (United States); Jason Chan, University of Tennessee (United States); Adam Disney, University of Tennessee (United States); Luke Bechtel, (United States); Ryan Wagner, (United States); Mark Dean, University of Tennessee (United States)*

States); Garrett Rose, University of Tennessee (United States); James Plank, (United States); John Birdwell, University of Tennessee (United States); Catherine Schuman, Oak Ridge National Laboratory (United States)

Evaluating Effectiveness of Approaches to Counter SQL Injection Attacks - 65 *Muhammad Nadeem*, *Mississippi State University (United States)*

Experiments on improving the morphology of active layer in perovskite solar cells - 165 Simon Foo, Florida A&M University (United States); Zhibin Yu, Florida State University (United States); Ifedayo Ogundana, Florida A&M University (United States)

Efficient Detection of Anomolous Payloads in Networks - 127 **Zhaoxuan Zhang**, Clark Atlanta University (United States); Roy George, Clark Atlanta University (United States); Khalil Shujaee, (United States)

Tutorial Track A - Complex Binary Number System

Complex Binary Number System - 41 *Tariq Jamil*, Sultan Qaboos University (Oman)

Tutorial Track B - Sustainable and Energy Efficient Data Centers: Challenges, Experiences and Opportunities

Sustainable and Energy Efficient Data Centers: Challenges, Experiences and Opportunities - 15 *Seppo Ovaska*, *Aalto University (Finland)*