

# **2018 9th IEEE Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON 2018)**

**New York City, New York, USA  
8-10 November 2018**

**Pages 1-552**



**IEEE Catalog Number: CFP18G31-POD  
ISBN: 978-1-5386-7694-3**

**Copyright © 2018 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 is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP18G31-POD
ISBN (Print-On-Demand):	978-1-5386-7694-3
ISBN (Online):	978-1-5386-7693-6

**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@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

# Content

Sl. No	Paper ID	Papers	Page No
<b>Track 1 Wireless Network</b>			
1.1	1570492463	A Security System Using Deep Learning Approach for Internet of Vehicles (IoV)	1-5
1.2	1570492670	Search and Rescue Operations with Mesh Networked Robots	6-12
1.3	1570493241	Implementation of the WAVE 1609.2 Security Services Standard and Encountered Issues and Challenges	13-18
1.4	1570493216	An IEEE1451.7 Based WSN Design For V2I Localization Services In Smart Cities: A Case Study Approach	19-25
1.5	1570493162	Vulnerabilities and Attacks Analysis for Military and Commercial IoT Drones	26-32
1.6	1570492416	Huber Fitting based ADMM Detection for Uplink 5G Massive MIMO Systems	33-37
<b>Track 2 Artificial Intelligence and Machine Learning</b>			
2.1	1570469512	Adaptive Optimal Output Regulation of Continuous Time Linear Systems via Internal Model Principle	38-43
2.2	1570478830	Automated Speech Emotion Recognition on Smart Phones	44-50
2.3	1570482306	Compressive Vehicle Tracking Using Deep Learning	51-56
2.4	1570492688	Sentiment Analysis of Twitter Data with Hybrid Learning for Recommender Applications	57-63
2.5	1570486271	Large-Scale Evolutionary Optimization Using Multi-Layer Differential Evolution	64-69
2.6	1570493059	Increasing Accuracy of Hand-Motion Based Continuous Authentication Systems	70-76
<b>Track 3 Big Data Analytics and Data Management</b>			
3.1	1570484876	Human Activity and Posture Classification Using Wearable Accelerometer Data	77-81
3.2	1570493430	Programmable Errorless Face-Name Association Device with Real-Time Processing	82-88

3.3	1570492879	Curating Research Data -Cyber security perspective from a nascent Brain Machine Interface Laboratory	89-94
3.4	1570493045	STEM Projects using Green Healthcare, Green IT, and Climate Change	95-101
3.5	1570493073	The Tiny Java Library for Maintaining Model Provenance	102-108
3.6	1570493074	HDFJavaIO: A Java library for reading and writing Octave HDF files	109-115
<b>Track 4 IoT, Body &amp; Personal Area Network and Others</b>			
4.1	1570488074	On Seamless Hole-free Virtual Emotion Barrier in IoT- enabled Smart Cities	116-121
4.2	1570493066	Fast Suboptimal Multi- Layer Detection Scheme for Demodulation in Diffusion - Based Molecular Communications	122-127
4.3	1570493155	Medical Device Security in the IoT Age	128-134
4.4	1570493158	A Framework to Identify Security and Privacy Issues of Smart Home Devices	135-143
4.5	1570493236	Asymptotic Transient Solutions of Fluid	144-151
4.6	1570489907	An Improved Accuracy Model Employing an e- Navigation System	152-158
<b>Track 5 Cloud and Virtual Network</b>			
5.1	1570489735	An Approximation Mechanism for Elastic IoT Application Deployment	159-165
5.2	1570490417	A Virtualized Network Function for Advanced Network Flow Logging in Microsoft Azure Distributed System	166-172
5.3	1570491769	SDN- Ready WAN networks: Segment Routing in MPLS-Based Environments	173-178
5.4	1570493070	Outage Probability and Ergodic Capacity Analysis in Cloud Radio Access Network with Nakagami-n Fading	179-184
5.5	1570493098	A Survey of DevOps tools for Networking	185-188
5.6	1570493051	Research into Making Healthcare Green with Cloud, Green IT, and Data Science to Reduce Healthcare Costs and Combat Climate Change	189-195
<b>Track 6 Internet of Things and Cloud Computing</b>			

6.1	1570492914	Field Agronomic Condition Test (F.A.C.T.) Environmental sensing: The Future of Agricultural and Conservation IOT	196-202
6.2	1570492934	TruParking: Smart Parking and the Internet of Things	203-209
6.3	1570493076	Adaptive QoS- Based Resource Management Framework for IoT/Edge Computing	210-217
6.4	1570484979	Implementation of Searchable Encryption System with Dedicated Hardware and its Evaluation	218-221
6.5	1570493011	Implementing a Mobile Identity Application in a Ubiquitous Computing Environment	222-228
<b>Track 7 Artificial Intelligence and Machine Learning</b>			
7.1	1570492784	Towards DoS/DDoS Attack Detection Using Artificial Neural Networks	229-234
7.2	1570492866	A Statistical Analysis of Electronic Instant Messaging Consequences in Networks	235-240
7.3	1570492883	Smart City Software Revolution - Blackboard Systems for Smart City Solutions	241-244
7.4	1570478676	Automation of RF Characterization Process for the Development of Feedforward AGC of Software Defined Radio	245-248
7.5	1570492941	Incorporating Advancements In Voting Strategies: A Survey	249-254
7.6	1570492668	New Compact Deep Learning Model for Skin Cancer Recognition	255-261
7.7	1570492905	Indoor Localization using Bluetooth-LE Beacons	262-268
<b>Track 8 Cognitive Radio Network &amp; AI</b>			
8.1	1570486176	Improving Secrecy Capacity and Energy Efficiency of Wireless Cognitive Radio Networks with Cooperative Relaying and Jamming	269-275
8.2	1570492904	Sensor Cooperation and Decision Fusion to Improve Detection in Cognitive Radio Spectrum Sensing	276-281
8.3	1570493079	Using LZMA Compression for Spectrum Sensing with SDR Samples	282-287
8.4	1570491720	Triple band V-slotted Pentagonal Microstrip Patch Antenna	288-290

8.5	1570493107	PCL-Based Autonomous Wheelchair Navigating in an Unmapped Indoor Environments	291-296
8.6	1570493237	Insider Threat Detection using an Artificial Immune system Algorithm	297-302
<b>Track 9 Complex Adaptive system</b>			
9.1	1570493520	A Hybrid Uplink Scheduling Approach for Supporting Mission-Critical Smart Grid applications in Commercial 4G Cellular Networks	303-308
9.2	1570493106	A Decentralized Mobile Computing Network for Multi-Robot Systems Operations	309-314
9.3	1570492363	Non-fragile Synchronization of Markovian Jumping Complex Dynamical Networks with Random Coupling and Time-Varying Delays	315-321
9.4	1570492769	Slot Reallocation for Ground Delay Programs	322-327
9.5	1570492956	Design and Implementation of Intelligent Logistics Distribution System for the Real-world Problem	328-334
9.6	1570475224	Implementation of a BJT based jerk circuit: route to chaos with multiple attractors	335-339
<b>Track 10 Control Theory and its Application</b>			
10.1	1570491841	Clock Variation Impact on Digital Filter Performance	340-344
10.2	1570492868	Design of Measurement and Control System in Marine Electric Propulsion	345-347
10.3	1570493085	Multi-Agent Approach to Analyzing Kinetics of a Multi-Actuated OmniDirectional Mobile Robot for Control System Development	348-354
10.4	1570493502	Non-Intrusive Activity Detection and Prediction in Smart Residential Spaces	355-361
10.5	1570493016	Micro Wind Turbine Control System Design with Fail-Safe Shutdown Capability	362-367
10.6	1570493760	Building Towards "Invisible Cloak": Robust Physical Adversarial Attack on YOLO Object Detector	368-374
<b>Track 11 Distributed System and Bigdata</b>			
11.1	1570488210	LBSNN: Neural Networks-based Moving Sink	375-381
11.2	1570493122	A Reference Model for Big Data Analytics	382-391

11.3	1570492968	Information Systems: An Agent For Growth In Rural Small And Medium Enterprises	392-399
<b>Track 12 Artificial Intelligence and Electronic Instrumentation</b>			
12.1	1570493080	Causes of Success in the La Liga and How to Predict them	400-407
12.2	1570493510	Improved Method for Solving Aerodynamic Problems Using Numerical and Computational Simulations	408-411
12.3	1570488717	Smart, Cross-Platform Binary Visualisation Tool	412-417
12.4	1570491863	An Electronic Instrument for Measurement of the Charge and Energy of Cosmic-Rays in High -Altitude Balloons	418-423
12.5	1570493040	Low SWaP, In-Situ Data Logger for Strain Measurement of Paddlefish Rostrums in Motion	424-428
12.6	1570475285	A Novel Fault Self-Detectable Universal Quantum Reversible Circuits Array Design	429-437
<b>Track 13 Artificial Intelligence and Machine Learning</b>			
13.1	1570492898	Combining Satellite Images with Feature Indices for Improved Change Detection	438-444
13.2	1570491991	Iris Print Biometric Identification Using Perceptual Image Hashing Algorithms	445-450
13.3	1570492413	Comparative Performance Analysis of Beam Sweeping Using a Deep Neural Net and Random Starting Point in mmWave 5G New Radio	451-456
13.4	1570492648	Probabilistic Blockchains: A Blockchain Paradigm for Collaborative Decision Making	457-465
13.5	1570492899	Machine Learning to Identify Android Malware	466-470
13.6	1570484879	Applying Machine Learning Models to Identify Forest Cover	471-477
<b>Track 14 Robotics and Automation System</b>			
14.1	1570487971	Perpetual Flight for UAV Drone Swarms Using Continuous Energy Replenishment	478-484
14.2	1570492403	Testing Autonomous Path Planning Algorithms and Setup for Robotic Vehicle Navigation	485-488
14.3	1570493062	Gaming the Gamer: Adversarial Fingerprinting of Gaming Apps using Smartphone Accelerometers	489-496

14.4	1570492908	Optimal Trajectory Planning for Multiple Waypoint Path Planning using Tabu Search	497-501
14.5	1570493088	Simulation and Analysis of DDoS Attack on Connected Autonomous Vehicular Network using OMNET++	502-508
<b>Track 15 Artificial Intelligence and Wireless Networks</b>			
15.1	1570493093	Cross-layer Multi-hop Broadcast based on Adaptive Neuro-FUZZY Inference System in VANETs	509-515
15.2	1570493113	Cyber Diode: Animated 2D Barcodes as a Mobile and Robust Data Diode in a Sustainment Network	516-519
15.3	1570493102	Fuzzy logic-based evolutionary approach for load balancing in large scale wireless sensor networks	520-525
15.4	1570493225	Security in Wireless Sensor Network and IoT: An Elliptic Curves Cryptosystem based Approach	526-530
15.5	1570492996	Performance Modeling and Analysis of Wireless Multi-hop Hierarchical Ad Hoc Network	531-536
15.6	1570492173	A Neural Network Approach for Indoor Fingerprinting-Based Localization	537-542
15.7	1570492044	Morph-a-Dope: Using Pupil Manipulation to Spoof Eye Movement Biometrics	543-552
<b>Track 16 Image Processing and Multimedia Technology</b>			
16.1	1570482307	Mars Surface Mineral Abundance Estimation Using THEMIS and TES Images	553-558
16.2	1570482496	Perceptually Lossless Compression for Mastcam Images	559-565
16.3	1570482503	Enhancing Stereo Image Formation and Depth Map Estimation for Mastcam Images	566-572
16.4	1570482517	Stereo Image and Depth Map Generation for Images with Different Views and Resolutions	573-579
16.5	1570492687	Automatic Food-Intake Monitoring System for Persons Living with Alzheimer's-Vision-Based Embedded System	580-584
16.6	1570493071	Integrating YOLO Object Detection with Augmented Reality for iOS Apps	585-589
<b>Track 17 Computer Networks and Computer Architecture</b>			



17.1	1570480240	A Novel Reversible Four Bit One's Complement Quantum Gate (OCQG 4B)	590-597
17.2	1570484948	Simulation and Analysis of Quality of Service (QoS) of Voice over IP (VoIP) through Local Area Networks	598-602
17.3	1570492042	Distribution Model for OpenFlow-based Networks	603-608
17.4	1570492901	Locating and Disregarding the Information from Compromised Sensors in a WSN	609-613
17.5	1570486284	An Efficient Weight-Based Clustering Algorithm using Mobility Report for IoV	614-620
17.6	1570493116	An Ontology-Based IoT Communication Data Reduction Method	621-625
<b>Track 18 AI &amp; Machine Learning, Others</b>			
18.1	1570492915	An Unsupervised Channel-Selection Method for SSVEP-based BCI Systems	626-632
18.2	1570492916	Flexible FSK Learning Demodulator	633-639
18.3	1570493275	Design of a VOIP Services Portfolio for Small Businesses Based on Free Download Software Tools	640-644
18.4	1570492933	A New Power Analysis Attack and a Countermeasure in Embedded Systems	645-652
18.5	1570493021	Activity Learning and Recognition Using Margin Setting Algorithm in Smart Homes	653-658
18.6	1570493057	Seagrass Propeller Scar Detection using Deep Convolutional Neural Network	659-665
<b>Track 19 AI &amp; Machine Learning</b>			
19.1	1570493063	Deep Learning with Synthetic Hyperspectral Images for Improved Soil Detection in Multispectral Imagery	666-672
19.2	1570493075	Enhancing the Ensemble of Exemplar SVMs for Binary Classification Using Concurrent Selection and Ensemble Learning	673-682
19.3	1570493087	Anomaly Generation Using Generative Adversarial Networks in Host Based Intrusion Detection	683-687
19.4	1570493089	Analysis and Detection of Outliers due to Data Falsification Attacks in Vehicular Traffic Prediction Application	688-694
19.5	1570493096	Low-Cost Device Prototype for Automatic Medical	695-699

		Diagnosis Using Deep Learning Methods	
<b>Track 20 Robotics, Artificial Intelligence &amp; Applications</b>			
20.1	1570493103	Trainable Robotic Arm for Disability Assistance	700-704
20.2	1570493110	Sip-and-Puff Autonomous Wheelchair for Individuals with Severe Disabilities	705-710
20.3	1570493065	Channel Capacity in a Dynamic Random Waypoint Mobility Model	711-715
20.4	1570492541	Sliding Mode Control with Dirty Derivatives Filter for Rigid Robot Manipulators	716-720
20.5	1570496519	Prediction of air leakage in heat exchangers for automotive applications using artificial neural networks	721-725
20.6	1570473003	A Survey of Privilege Escalation Detection in Android	726-731
<b>Track 21 Image Processing and Multimedia Technology</b>			
21.1	1570493118	Deep learning based offline signature verification	732-737
21.2	1570493498	Study on the Biochemical Nanoparticles for Bioimaging and Molecular Diagnostics of Alzheimer's Disease	738-741
21.3	1570493521	Effects of K-space Spatial Low-pass Filtering on Bio-imaging Analysis	742-745
21.4	1570497624	Robust Background Subtraction Based Person's Counting From Overhead View	746-752
21.5	1570492147	On Measuring the Complexity of Musical Rhythm	753-757
21.6	1570490818	RGBD Model Based Human Detection and Tracking Using 3D CCTV	758-762
<b>Track 22 Electronics, Algorithm and Security</b>			
22.1	1570493095	Augmenting Stochastic Local Search with Heuristics	763-768
22.2	1570487727	Encryption and Decryption of Mobile Security Using AES and GOST Algorithms	769-772
22.3	1570492207	Potential effect of suboptimal racial and ethnic categorization on benefits of precision medicine	773-778
22.4	1570493101	A New Differential Oscillator with T type Feedback	779-782
22.5	1570488738	A GPU accelerated parallel heuristic for The 2D Knapsack Problem with Rectangular Pieces	783-787

22.6	1570493272	Design and Construction of an Obstacle Avoiding Robot Based on Arduino Platform and Programming Tools	788-791
<b>Track 23 Cryptography &amp; Network Security</b>			
23.1	1570486399	Enhancing IEEE 802.11i Standard using Quantum Cryptography	792-795
23.2	1570486395	Advanced Security Methods for Dummy Location-Based Services	796-799
23.3	1570493041	Improve Healthcare Safety Using Hash-Based Authentication Protocol for RFID Systems	800-805
23.4	1570493099	BID: Blockchaining for IoT Devices	806-811
23.5	1570493153	Quality of Service Analysis of VoIP Services	812-818
23.6	1570493077	A Survey of Technologies Utilized in the Treatment and Diagnosis of Attention Deficit Hyperactivity Disorder	819-824
<b>Track 24 Wireless Networks and Mobile Computing</b>			
24.1	1570493528	Age Upon Decisions with General Arrivals	825-829
24.2	1570464877	Hexagonal Meshed Rectangular Reflectarray Antenna In Ku Band For Satellite Communication	830-835
24.3	1570485087	Evacuation Assisting Strategies in Vehicular Ad Hoc Networks	836-841
24.4	1570485728	Performance Analysis of DSCDMA and MCCDMA Systems	842-846
24.5	1570492907	Automated Structured Threat Information Expression (STIX) Document Generation with Privacy Preservation	847-853
24.6	1570487390	Tracking Area Update Procedure Unnecessary in 5G: Improving User Experience and Offloading Signaling Overhead	854-860
<b>Track 25 Artificial Intelligence &amp; Machine Learning &amp; Security</b>			
25.1	1570492432	Concerns and Security for Hashing Passwords	861-865
25.2	1570485715	Development of Web-based Automated System for Cyber Analytic Applications	866-871
25.3	1570486788	Towards A Smart Hospital: Automated Non-Invasive Patient's Discomfort Detection in Ward Using Overhead Camera	872-878

25.4	1570488057	Exploiting Behavioral Differences to Detect Fake News	879-884
25.5	1570498924	Deep Learning of Electrocardiography Dynamics for Biometric Human Identification in era of IoT	885-888
<b>Track 26 Wireless Networks and Mobile Computing</b>			
26.1	1570487502	Verifying of LTE Received Power Measurements in an Android App	889-894
26.2	1570488886	Digital VHF/UHF Antenna Selector Implemented in Software Defined Radio	895-900
26.3	1570493019	Neural Encoder-Decoder based Urdu Conversational Agent	901-905
26.4	1570492449	A Comparative Analysis of Properties that May be Used for Malware Detection	906-910
26.5	1570493028	Cost-constrained Handoff in Next Generation Heterogeneous Wireless Networks	911-916
26.6	1570492409	Automated Dye-Sensitized Solar Cell Manufacturing System with IoT Monitoring	917-921
<b>Track 27 Informatics &amp; Engineering Applications in Medicine and Biology</b>			
27.1	1570492911	Classifying Self-Care Activities of Children and Youths with Disabilities	922-928
27.2	1570489478	Biomedical Data Reduction with Sub Nyquist Sampling and Wavelet Decomposition	929-933
27.3	1570492428	Cloud based telemedicine in Neurology Clinics: A new horizon	934-938
27.4	1570484885	Computational 3D Imaging of Tissues Using Single Frequency Microwave Data	939-944
27.5	1570492697	ReGene: Blockchain backup of genome data and restoration of pre-engineered expressed phenotype	945-950
27.6	1570492792	SmartEye: An Accurate Infrared Eye Tracking System for Smartphones	951-959
<b>Track 29 E-Commerce, Information Security &amp; Big Data</b>			
29.1	1570492845	Towards Cost Effective Smarter Cities	960-963
29.2	1570492863	Crowdfunding the Insurance of a Cyber Product Using Blockchain	964-970

29.3	1570492995	Classification and Regression Decision Tree: A Mining Technique for Students' Insights on the University Services with Text Analysis	971-976
29.4	1570492910	Predicting Congestion Level in Wireless Networks Using an Integrated Approach of Supervised and Unsupervised Learning	977-982
29.5	1570492919	Merkle-Tree Based Approach for Ensuring Integrity of Electronic Medical Records	983-987
<b>Track 30 Informatics , Image Sharing and Engineering Applications in Medicine and Biology</b>			
30.1	1570493052	A Review: Ubiquitous Healthcare Monitoring with Mobile Phone	988-996
30.2	1570493209	Step Length and Step Width Estimation using Wearable Sensors	997-1001
30.3	1570493108	Scalable Smart Home Interface using Occipitalis sEMG Detection and Classification	1002-1008
30.4	1570493432	Acute Stress Detection and Analysis Using Resonant Field Imaging (RFI) Technique	1009-1016
30.5	1570492417	Mobile Robot-based Exergames for Navigation Training and Vestibular Rehabilitation	1017-1024
30.6	1570492705	A Verifiable (n, n) Secret Image Sharing Scheme using XOR Operations	1025-1031
<b>Track 31 Wireless Communication and Mobile Computing</b>			
31.1	1570493092	Mobile Switch Control Using Auditory and Haptic Steady State Response in Ear-EEG	1032-1037
31.2	1570493009	Electromagnetic Absorption Comparison of Dipole and Microstrip Patch Antenna in the Human Head	1038-1041
31.3	1570492436	Load Balanced User Grouping Scheme for Multibeam Multicast Satellite Communications	1042-1046
31.4	1570489227	Performance Evaluation of TSCH in Industrial WSN	1047-1054
31.5	1570498055	Realtime Activity and Fall Risk Detection for Aging Population Using Deep Learning	1055-1059
<b>Track 33 Artificial Intelligence and Sensors</b>			
33.1	1570493512	Study on the Economic Indicator Forecasts Using Computational Statistics	1060-1066
33.2	1570495187	A low cost autonomous multipurpose vehicle for advanced robotics	1067-1078

33.3	1570488846	Smart Motorcycle Vest Using Arduino and Pressure sensing module	1079-1085
<b>Track 34 Robotics and Autonomous systems</b>			
34.1	1570492148	Teleoperated Rover for the Standoff Ultracompact micro-Raman Spectroscopy Instrument	1086-1087
34.2	1570492943	Data capturing and modeling by speech recognition: Roles demonstrated by artificial intelligence, A survey	1088-1092