2019 IEEE 10th Annual Ubiquitous Computing, Electronics & Mobile Communication Conference (UEMCON 2019)

New York City, New York, USA 10-12 October 2019

Pages 1-609



IEEE Catalog Number: CFP19G31-POD

ISBN: 978-1-7281-3886-2

Copyright © 2019 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:
 CFP19G31-POD

 ISBN (Print-On-Demand):
 978-1-7281-3886-2

 ISBN (Online):
 978-1-7281-3885-5

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 Web: www.proceedings.com



Content

01.1 1570566143 A Raspberry Pi Mesh Sensor Network Security 01.2 1570564666 Use of Sensor Node Networks for Car of 01.3 1570572114 Location Tracking of Mobile Objects a Pilot Study of Emergency Department Using Experimental Video Photoplethy	For Portable Perimeter Security Ind the Privacy Tradeoff Patient Vital Signs acquisition is smography and Passive	0001 0008 0015 0023
01.1 Security 01.2 1570564666 Use of Sensor Node Networks for Car Security 01.3 1570572114 Location Tracking of Mobile Objects a Pilot Study of Emergency Department Using Experimental Video Photoplethy	Security nd the Privacy Tradeoff Patient Vital Signs acquisition smography and Passive	0008
01.3 1570572114 Location Tracking of Mobile Objects a Pilot Study of Emergency Department Using Experimental Video Photoplethy	nd the Privacy Tradeoff Patient Vital Signs acquisition smography and Passive	0015
Pilot Study of Emergency Department Using Experimental Video Photoplethy	Patient Vital Signs acquisition smography and Passive	
01.4 1570557633 Using Experimental Video Photoplethy	smography and Passive	0023
Infrared Thermography Devices	Trusted Interactions in the	
01.5 1570575494 Formal Trust Architecture for Assuring Internet of Things	Trusted interactions in the	0033
01.6 1570576352 Optimized Wireless Connectivity for C Publisher/Subscriber Architecture	yber-Physical Systems with	0040
01.7 1570584408 Simulation of Transitional and Bursty Networks	Vireless Visual Sensor	0050
SESSION 2: ARTIFICIAL INTELLIGENCE AN	ND MACHINE LEARNING	
02.1 1570563227 Machine Learning Meteorologist Can I	Predict Rain	0057
02.2 1570557234 Network Data Analysis to Support Risk Environment	Management in an IoT	0063
02.3 1570563232 Comparison of Machine Learning Mod	els to Predict Twitter Buzz	0069
02.4 1570584871 What is A Robot Swarm: A Definition	for Swarming Robotics	0074
02.5 1570565400 Deep Learning for Inexpensive Image of the Raspberry Pi	Classification of Wildlife on	0082
02.6 1570566231 A SS-CNN on an FPGA for Handwritte	en Digit Recognition	0088
02.7 1570563235 Performance of Classification Models of Character Data	on Various Types of	0094
SESSION 3: IOT, BIG DATA ANALYTICS AN	D DATA MANAGEMENT	
03.1 1570584560 Goal-Oriented Conversational System Attention Mechanism	Using Transfer Learning and	0099
03.2 1570564718 Big Data Analytics in Cybersecurity: N Prediction	etwork Data and Intrusion	0105
03.3 1570562030 A Hive and SQL Case Study in Cloud	Data Analytics	0112
03.4 1570563210 Image Recognition with MapReduce B Networks	ased Convolutional Neural	0119

i

03.5	1570574903	Exploring A Forecasting Structure for the Capacity Usage in Backup Storage Systems	0126
03.6	1570575504	Machine Learning Pipeline for Fraud Detection and Prevention in E- Commerce Transactions	0135
03.7	1570586484	Improving Rider Safety Using QR Code & Fingerprint Biometrics	0141
S	SESSION 4: IC	OT, BODY AND PERSONAL AREA NETWORK, EVOLUTIONAL ALGORITHM	RY
04.1	1570564879	Mitigating Implanted Medical Device Cybersecurity Risks	0145
04.2	1570575510	Novel Hash-Based Radix Sorting Algorithm	0149
04.3	1570588077	Security Architecture Framework for Internet of Things (IoT)	0154
04.4	1570576075	A Novel Phase Tracking in ZigBee Receiver Using Extended Kalman Filtering over AWGN Channel	0158
04.5	1570584765	Improv Performance with WiFi Enabled Costume Lights	0163
04.6	1570593476	Deep Convolutional Neural Networks for Breast Cancer Detection	0169
04.7	1570577430	Time-Variant Broadband mmWave Channel Estimation Based on Compressed Sensing	0172
SESSION 5: WIRELESS NETWORK, IMAGE PROCESSING AND MULTIMEDI. TECHNOLOGY			
05.1	1570584638	A Thermally Regulated Footwear & Alerting System	0179
05.2	1570586485	Duty-Cycled, Sub-GHz Wake-up Radio with -95dBm Sensitivity and Addressing Capability for Environmental Monitoring Applications	0183
05.3	1570571327	A New Approach to Change Detection Using Heterogeneous Images	0192
05.4	1570584301	A Wearable Device Network to Track Animal Behavior and Relationships in the Wild	0198
05.5	1570584636	Optimized IoT Based Decision Making for Autonomous Vehicles in Intersections	0203
05.6	1570584368	Tracking the Mobile Jammer in Wireless Sensor Networks Using Extended Kalman Filter	0207
05.7	1570584579	A Secure IoT-Fog-Cloud Framework Using Blockchain Based on DAT for Mobile IoT	0213
	SESSI	ON 6: INTERNET OF THINGS AND CLOUD COMPUTING	
06.1	1570566582	Quality Model for Testing Augmented Reality Applications	0219
06.2	1570565776	Ubiquitous Access for Local Water Management Through HCI Based App Development	0227
06.3	1570584711	Data Modeling for a NoSQL Database Service	0234
06.4	1570576378	A New Approach Towards Fully Homomorphic Encryption over Geometric Algebra	0241
06.5	1570584824	Securing a Connected Home	0250

06.6	1570584842	Securing Wireless Scada Systems in Rural American Power Grids	0257
06.7	1570584595	Trusted Remote Function Interface	0263
	SESSION	7: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING	
07.1	1570584584	AdRemover: The Improved Machine Learning Approach for Blocking Ads	0270
07.2	1570566594	SIPSA: Secure IoT Protocol-Based Smart Adapter for Communicating and Optimizing Building Energy Management with Smart Grid	0276
07.3	1570580515	Thin MobileNet: An Enhanced MobileNet Architecture	0280
07.4	1570583606	Deep Learning for Remote Sensing Image Super-Resolution	0286
07.5	1570573232	Derivative-Free Optimization of Neural Networks Using Local Search	0293
07.6	1570579494	Machine Learning Models to Predict Multiclass Protein Classifications	0300
07.7	1570584635	Cumulative Training and Transfer Learning for Multi-Robots Collision-Free Navigation Problems	0305
SES	SION 8: ARTI	FICIAL INTELLIGENCE, IMAGE PROCESSING AND MULTIN TECHNOLOGY	MEDIA
08.1	1570584580	Vision-Based Trainable Robotic Arm for Individuals with Motor Disability	0312
08.2	1570571324	New Results in Change Detection Using Optical and Multispectral Images	0316
08.3	1570578453	Network Traffic-Based Hybrid Malware Detection for Smartphone and Traditional Networked Systems	0322
08.4	1570576070	Drones' Face off: Authentication by Machine Learning in Autonomous IoT Systems	0329
08.5	1570571326	Practical Considerations in Unsupervised Change Detection Using SAR Images	0334
08.6	1570584558	Robust Data Retrieval from High-Security Structural Colour QR Codes via Histogram Equalization and Decorrelation Stretching	0340
08.7	1570584538	Identifying Generic Features for Malicious URL Detection System	0347
		SESSION 9: CONTROL THEORY AND ROBOTICS	
09.1	1570561886	Clock Variation Impact on Digital Control System Performance	0353
09.2	1570584493	Application of Robot Operating System In Robot Flocks	0359
09.3	1570570697	On Stability of Current Controlled Drives with Delay in Feedback Path	0364
09.4	1570584574	A Low-Power Optical Receiver for Contact-free Programming and 3D Localization of Autonomous Microsystems	0371
09.5	1570575110	Control System Response Improvement via Denoising Using Deep Neural Networks	0377

09.6	1570584521	A Novel Double Spending Attack Countermeasure in Blockchain	0383
09.7	1570584571	Robotic Solutions for Eldercare	0389
SESSION 10: ARTIFICIAL INTELLIGENCE, BIG DATA, AND IOT			
10.1	1570584645	Unsupervised Similarity-based Sensor Selection of Time Series	0395
10.2	1570572316	Machine Learning for DDoS Attack Classification Using Hive Plots	0401
10.3	1570561883	An Algorithmic Solution for the Hair Ball Problem in Data Visualization	0408
10.4	1570569213	What Makes a National Football League Team Successful? an Analysis of Play by Play Data	0419
10.5	1570573480	Data Mining in the NBA: An Applied Approach	0426
10.6	1570584513	Multi-Objective Optimization for Size and Resilience of Spiking Neural Networks	0433
10.7	1570584628	Office Multi-Occupancy Detection Using BLE Beacons and Power Meters	0440
SE	SSION 11: IM	IAGE PROCESSING, MULTIMEDIA TECHNOLOGY AND OTH	IERS
11.1	1570563204	Change Detection Using Original and Fused Landsat and Worldview Images	0449
11.2	1570561494	Vulnerability Analysis and Modeling	0455
11.3	1570575762	The Design of Digital IIR Filters Using a Differential Evolution Optimization Algorithm with Taguchi Crossover	0462
11.4	1570571329	Multiple Human Objects Tracking and Classification Directly in Compressive Measurement Domain for Long Range Infrared Videos	0469
11.5	1570576282	Facial Expression Recognition Using DCNN and Development of an iOS App for Children with ASD to Enhance Communication Abilities	0476
11.6	1570565495	A New Quantum Processor Architecture	0483
11.7	1570571328	Tracking and Classification of Multiple Human Objects Directly in Compressive Measurement Domain for Low Quality Optical Videos	0488
SESS	SION 12: ART	IFICIAL INTELLEGENCE AND ELECTRONIC INSTRUMENT.	ATION
12.1	1570584632	Activity Monitoring System to Support Elderly Independent Living	0495
12.2	1570585797	Time Series Modeling of Storm Outages with Weather Masonet Data for Emergency Preparedness and Response	0499
12.3	1570565587	Micro-Doppler Radar Measurement of Sit-to-Stand-to-Sit Movement for Evaluation of High-level Instrumental Activities of Daily Living	0506
12.4	1570586522	3D Object Detection Based on LiDAR Data	0511
12.5	1570588627	FBAD: Fog-based Attack Detection for IoT Healthcare in Smart Cities	0515

12.6	1570570957	Battery Charging Application Thorough PVA and MPPT Controller with Voltage Regulation	0523	
12.7	1570574927	Electroencephalographic (EEG) Analysis of Individuals Experiencing Acute Mental Stress	0528	
	SESSION 13:	BLOCKCHAIN, ARTIFICIAL INTELLIGENCE AND BIG DATA ANALYTICS	A	
13.1	1570584789	Using Historical Data to Predict Parking Occupancy	0534	
13.2	1570574838	Consortium Blockchain-Based Architecture for Cyber-attack Signatures and Features Distribution	0541	
13.3	1570576312	Scaling Blockchains to Support Electronic Health Records for Hospital Systems	0550	
13.4	1570578361	Residual Capsule Network	0557	
13.5	1570584543	Machine Learning Models for Activity Recognition and Authentication of Smartphone Users	0561	
13.6	1570576231	ACO-based Distributed Energy Routing Protocol in Smart Grid	0568	
13.7	1570584598	Unformatted, Certified Scientific Objects	0572	
SESSION 14: ELECTRONIC INSTRUMENTATION AND WIRELESS NETWORKS				
14.1	1570584622	Automated Well Water Contamination Tester and Web Service	0578	
14.2	1570575375	Probabilistic Sensor Design for Healthcare Technology	0585	
14.3	1570584359	EEG-Based Biometrics Utilizing Image Recognition for Patient Identification	0591	
14.4	1570584895	Tabletop Human Computer Interface to Assist Elderly with Tasks of Daily Living	0596	
14.5	1570579400	Integration of UAVs with Real Time Operating Systems Using UAVCAN	0600	
14.6	1570584910	Winter Cabin Water Tap Monitor and Release System to Reduce Risk of Freezing	0606	
14.7	1570584565	Towards Better Management of Combined Sewage Systems	0610	
S	SESSION 16: AD HOC NETWORKS, IMAGE PROCESSING AND MULTIMEDIA TECHNOLOGY			
16.1	1570558642	Segmentation of Skin Lesion Using Harris Corner Detection and Region Growing	0614	
16.2	1570584254	Comparative Analysis of Stereo Matching Algorithms	0620	
16.3	1570576330	Overhead View Person Detection Using YOLO	0627	
16.4	1570584562	Designing and Analysis of IEEE 802.11 MAC for UAVs Ad Hoc Networks	0634	
16.5	1570586428	A Hierarchical P2P Overlay for Hierarchical Mobile Ad Hoc Networks (MANETs)	0640	

16.6	1570584568	Performance of the CR-MAC with Channel Fading and Capture Effect Under Practical Traffic Scenarios for VANETs	0647
SESSION 17: ELECTRONIC INSTRUMENTATION AND SECURITY			
17.1	1570575746	Assurance for CyberSecurity with Assume-Guarantee Reasoning	0653
17.2	1570576093	Data Augmentation with Generative Models for Improved Malware Detection:A Comparative Study	0660
17.3	1570576287	An Effective Approach to Classify Abnormal Network Traffic Activities Using Wavelet Transform	0666
17.4	1570576318	AECC: An Enhanced Public Key Cryptosystem for User Defined Messages	0673
17.5	1570576374	An Efficient Security Scheme for the Internet of Things with Resource-Constrained Devices	0679
17.6	1570575372	Distributed Image Encryption Based on a Homomorphic Cryptographic Approach	0686
	SESS	SION 18: CRYPTOGRAPHY AND NETWORK SECURITY	
18.1	1570575112	CSAT: A User-interactive Cyber Security Architecture Tool Based on NIST-compliance Security Controls for Risk Management	0697
18.2	1570575183	Formulating Support for Superpages to Reduce the Number of TLB Faults in Contiguous Virtual Memory Space	0708
18.3	1570564933	Identification of Critical-Attacks Set in an Attack-Graph	0716
18.4	1570561681	Maximum Diversity in Web Application User Action Privacy	0723
18.5	1570564876	On the Efficacy of Using Android Debugging Bridge for Android Device Forensics	0730
18.6	1570584567	PDFPhantom: Exploiting PDF Attacks Against Academic Conferences' Paper Submission Process with Counterattack	0736
SESS	ION 19: TELE	COMMUNUCATION SYSTEM, WIRELESS NETWORKS AND COMPUTING	CLOUD
19.1	1570588612	Dual-Beam Analog Beamforming for mmWave Communications	0744
19.2	1570588626	An Approach to Optimize Device Power Performance Towards Energy Efficient Next Generation 5G Networks	0749
19.3	1570576371	A Physical Strength Measurement and Analysis System for Elderly People Using Motion Sensors	0755
19.4	1570586459	DeepSlice: A Deep Learning Approach Towards an Efficient and Reliable Network Slicing in 5G Networks	0762
19.5	1570566390	A Distributed Weight-Based TDMA Scheduling Algorithm for Latency Improvement in IoT	0768
19.6	1570576385	NetDevOps: A New Era Towards Networking & DevOps	0775

SESSION 20: ARTIFICIAL INTELLIGENCE, MACHINE LEARNING AND EVOLUTIONARY ALGORITHM				
20.1	1570570922	Voice Interactive Games	0780	
20.2	1570576025	Automated System for Cervical Abnormality Detection Using Machine Learning	0785	
20.3	1570584880	Stability Improvement of Power Networks Using Cluster Based Dynamic Excitation of AVR	0791	
20.4	1570566277	Conceptual Neuroadaptive Brain-Computer Interface Utilizing Event-related Desynchronization	0796	
20.5	1570576304	An Efficient Heuristic for the Vacation Planning Problem	0803	
20.6	1570584882	ASCPN – A Security Evaluation System for Cyber Power Networks	0809	
	SESSION 21: 1	ROBOTICS, AUTONOMOUS SYSTEM, AND CONTROL THEOI	RY	
21.1	1570566300	Synchronization of Fractional-Order Complex Chaotic System Using Active Control Method	0817	
21.2	1570571370	Design and Implementation of an Indoor Ambient Noise Monitoring System with Localization	0824	
21.3	1570586099	Congestion Control and Traffic Management in Wireless Sensor Networks	0830	
21.4	1570563183	Facing the Music: Performance Implications of Working with Music in the Background	0837	
21.5	1570575378	Feedback Motion Plan Verification for Vehicles with Bounded Curvature Constraints	0844	
	SESSION	22: WIRELESS NETWORK, IOT AND TELECOMMUCATION		
22.1	1570584331	Smart Energy Efficiency for a Sustainable World	0855	
22.2	1570591375	Study on the Nano-scaled Molecules Used in Treatment for Melanoma Using Bio-chemical and Computational Analysis	0862	
22.3	1570591924	GSM Based Irrigation System	0867	
22.4	1570575134	Incentives Don't Solve Blockchain's Problems	0873	
22.5	1570565655	Airborne-Relay-based Algorithm for Locating Crashed UAVs in GPS-Denied Environments	0877	
22.6	1570573184	On Approximation of Gaussian Q-Function and Its Applications	0883	
22.7	1570576293	Evaluation of a Realistic Example of Information-Centric Network Metadata Management	0888	
SES	SESSION 23: ARTIFICIAL INTELLIGENCE, MACHINE LEARNING AND SECURITY			
23.1	1570579444	A Fast and Secure Pipelined Barrel Processor for Safety-Critical Applications for Real-Time Operating Systems	0894	

23.2	1570562552	Smart Card Based Remote User Authentication Scheme for Cloud	0905	
23.2	1370302332	Computing	0903	
23.3	1570567047	A Condition Monitoring System for the Analysis of Bearing Distributed Faults	0911	
23.4	1570571985	Activity Learning for Intelligent Buildings	0916	
23.5	1570577248	Music Streaming Service Prediction with MapReduce Based Artificial Neural Network	0924	
23.6	1570584609	A Low-Cost Arm Robotic Platform Based on Myoelectric Control for Rehabilitation Engineering	0929	
	SESSIO	N 24: WIRELESS NETWORKS AND MOBILE COMPUTING		
24.1	1570549788	Coverage and Routing Hole Detection in Cyber-physical Network Paradigm	0934	
24.2	1570564553	Performance Study of Detectability of RFID System with Varying Atmospheric Conditions	0940	
24.3	1570575735	Scavenging Residual Energy from Wi-Fi Sources Using a Rectenna Circuit	0945	
24.4	1570576184	Constant Size CP-ABE with Scalable Revocation for Resource- Constrained IoT Devices	0951	
24.5	1570574807	On the Influence of Delay Spread in TDL and CDL Channel Models for Downlink 5G MIMO Systems	0958	
24.6	1570558169	Channel Redundancy Analysis and Bandwidth Utilization in GSM Mobile Communication Network of Uganda	0963	
	SESSION 25	: ENCODING TECHNOLOGY, MOBILE COMPUTING AND IO	Г	
25.1	1570582020	Multi-sensor Wearable for Child Safety	0968	
25.2	1570576355	A Comprehensive Experimental Evaluation of Radio Irregularity in BLE Networks	0973	
25.3	1570587569	The Effect of Cognitive Load on Gesture Acceptability of Older Adults in Mobile Application	0979	
25.4	1570591968	Study on Unemployment Rate in USA Using Computational and Statistical Methods	0987	
25.5	1570575956	An Architectural Schema for Performance Prediction Using Machine Learning in the Fog-to-Cloud Paradigm	0994	
25.6	1570591243	Analysis of Trend in Traffic Flow Using Computational and Statistical Approaches	1003	
5	SESSION 26: TELECOMMUNICATION SYSTEMS AND NETWORK SECURITY			

26.1	1570576125	Performance Analysis for Nonlinear MU-OFDM-DCSK	1010
20.1	13/03/0123	Communication Systems	1010
26.2	1570564880	SecML: A Proposed Modeling Language for CyberSecurity	1015
26.3	1570576090	A Matching Game Solution for Optimal RAT Selection in 5G Multi-RAT HetNets	1022
26.4	1570584530	Efficient Feature Selection for Intrusion Detection Systems	1029
26.5	1570576091	Optimal Deployment of Heterogeneous Wireless Nodes in Integrated LTE/Wi-Fi Networks	1035
26.6	1570576145	Ergodic Rate Performance in Nonlinear Omnidirectional Coding MIMO-OFDM Systems	1042
26.7	1570580255	Estimation of the 2020 US Presidential Election Competition	1046
	SESSION	27: AD HOC NETWORK AND ARTIFICIAL INTELLEGENCE	
27.1	1570584561	Towards a Threat Model for Vehicular Fog Computing	1051
27.2	1570592349	Speed Controlling & Traffic Management System (SCTMS)	1058
27.3	1570572079	UWB Channel Classification Using Convolutional Neural Networks	1064
27.4	1570584608	Suicide Prediction Analysis with Generalized Addictive Model	1069
27.5	1570575348	Mirage: A Protocol for Decentralized and Secured Communication of IoT Devices	1074
27.6	1570584529	A Deep Neural Network Approach for Top View People Detection and Counting	1082
SESSION 28: IMAGE PROCESSING, ARTIFICIAL INTELLIGENCE AND OTHI			
28.1	1570576337	Inter-UAV Collision Avoidance Using Deep-Q-Learning in Flocking Environment	1089
28.2	1570584547	Smart Phone Based Mobile Code Dissemination for Heterogeneous Wireless Sensor Networks	1096
28.3	1570576116	Interference Mitigation by Intelligent Channel Selection for Device-to-Device Communications	1103
28.4	1570584564	Towards a Threat Model for Fog Computing	1110
28.5	1570576227	A Misbehavior Authority System for Sybil Attack Detection in C-ITS	1117
SESSION 29: ELECTRONIC POWER CONVERTER, FPGA, ARTIFICIAL INTELLIGENCE AND OTHERS			
29.1	1570576461	Study of Mm-Sized Coil to Coil Backscatter Based Communication Link	1124
29.2	1570584633	Low Power FPGA-SoC Design Techniques for CNN-based Object Detection Accelerator	1130
29.3	1570558536	Adaptive Compensation H∞ Filter with Convergence Criterion for SINS' Transfer Alignment	1135

29.4	1570586422	A Survey of Applying Reinforcement Learning Techniques to Multicast Routing	1145
29.5	1570587188	Decoding Steady-State Visual Evoked Potentials from EEG Signals: Towards an EEG-Triggered FES System to Restore Hand Grasp Function	1152
29.6	1570593091	IoT Based Smart Security and Home Automation System	1158
SE	SSION 30: VL	SI AND MICROEMBEDDED CIRCUIT EMBEDDED SYSTEMS OTHERS	AND
30.1	1570580454	A Multi-Phase Time-to-Digital Converter Differential Vernier Ring Oscillator	1162
30.2	1570584541	Thermal-Constrained, Energy-Aware Load Management on MPSoC Architectures	1168
30.3	1570586610	Low Power Design for DVFS Capable Software	1175
30.4	1570584594	A Feedback Motion Plan for Vehicles with Bounded Curvature Constraints	1180
30.5	1570585172	Security Considerations for the Development of Secure Software Systems	1187
30.6	1570584546	Applying Ad Hoc Technology in Inner City Communication	1194
30.7	1570562248	Performance Analysis of Squarely Packed Polymorphic SWCNT Interconnect	1199
SESSION 31: ELECTRONIC INSTRUMENTATIONS, WIRELESS SENSOR NETWO AND OTHERS			VORK
31.1	1570591962	Business Intelligence Solution for Bikers Haven Restaurant	1204
31.2	1570584218	Dynamic Beam Management for NR Using Adaptive Antenna Array	1211