2021 IEEE World AI IoT Congress (AIIoT 2021)

Virtual Conference 10 – 13 May 2021



IEEE Catalog Number: CFP21AJ4-POD ISBN: 978-1-6654-0248-4

Copyright © 2021 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:
 CFP21AJ4-POD

 ISBN (Print-On-Demand):
 978-1-6654-0248-4

 ISBN (Online):
 978-1-6654-3568-0

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

Sr. No.	Paper ID	Paper Title	Page No				
	SESSION 1: ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING						
01.1	1570715113	Differentially-private federated learning with long-term budget constraints using online lagrangian descent	0001				
01.2	1570715664	Automatic Detection Using Deep Convolutional Neural Networks for 11 Abnormal Positioning of Tubes and Catheters in Chest X-Ray Images	0007				
01.3	1570712763	Integrated Energy Monitoring and Control iot System and Validation Results From Neural Network Control Demonstration	0013				
01.4	1570716165	Forecasting Vaccination Drive in India for Herd Immunity Using SIR and Prophet Model	0021				
01.5	1570715920	Multi-Modal Multi-Stream UNET Model for Liver Segmentation	0028				
01.6	1570715852	Adversarial black-box attacks against network intrusion detection systems: a survey	0034				
	SESSION 2: Al	RTIFICIAL INTELLIGENCE AND MACHINE LEAR	NING				
02.1	1570711828	Early Prediction of Electronics Engineering Licensure Examination Performance Using Random Forest	0041				
02.2	1570712922	Remote Crop Sensing With iot and AI on the Edge	0048				
02.3	1570712927	An Audio Processing Approach using Ensemble Learning for Speech-Emotion Recognition for Children with ASD	0055				
02.4	1570715491	Knife Detection Using Indoor Surveillance Camera	0062				
02.5	1570716162	Expert System in Micropower Grid Planning	0069				
02.6	1570712117	Octai: smartphone-based optical coherencetomography image analysis system	0072				
	SESSION 3:	BIG DATA, DATA MANAGEMENT AND ANALYTIC	CS				
03.1	1570712897	GERAM BAZAR, A Mobile Application and Website Interface E-commerce	0077				
03.2	1570712901	Development of A Mobile Application forPatient's Medical Record and History	0081				
03.3	1570711844	Collaborative Fog Computing Architecture for Privacy- Preserving Data Aggregation	0086				

03.4	1570710554	Understanding the Association of Personal Outlook in Free Speech Regulation and the Risk of being Mis/Disinformed	0092
03.5	1570716126	Epidemiological Spatiotemporal Data Exploration and Prediction	0098
	SESSIO	N 4: BIG DATA AND ARTIFICIAL INTELLIGENCE	
04.1	1570712562	Hardware Deployment of hbonext Using NXPBluebox 2.0	0105
04.2	1570716182	HACS: Access Control for Streaming Data Across Heterogeneous Communication Models	0109
04.3	1570712235	A Survey on Machine Learning and Internet of Things for COVID-19	0115
04.4	1570712908	An Interactive Android Application to ShareRides With nsuers	0121
04.5	1570712914	An Interactive Web Platform and Android Application Based on Room Sharing Service forStudents	0127
04.6	1570712907	Rentbd- An Exclusive Fashion Rental Service	0132
	SESSION 5: Al	RTIFICIAL INTELLIGENCE AND MACHINE LEARN	NING
05.1	1570712909	Education System for Bangladesh Using Augmented Reality, Virtual Reality and Artificial Intelligence	0137
05.2	1570711653	Food Temperature Analysis and Forecasting	0143
05.3	1570712555	Prediction of Link Quality for iot Cloud Communications Supported by Machine Learning	0150
05.4	1570706023	Efficient Early Prediction and Diagnosis of Diseases Using Machine Learning Algorithms for iomt Data	0155
05.5	1570712717	Prediction of Weather Forecast for Smart Agriculture Supported by Machine Learning	0160
05.6	1570712905	Educational Web Application for Young People to Raise Awareness on Menstruation	0165
		SESSION 6: AI ALGORITHMS	
06.1	1570715879	Hybrid ant swarm-based data clustering	0170
06.2	1570716178	Improved Noise Filtering Technique For Wake Detection in SAR Image Under Rough Sea Condition	0174
06.3	1570716177	A Comparative Analysis of Lithium IonBattery Input Profiles for Remaining Useful Life Prediction by Cascade Forward Neural Network	0181

06.4	1570715438	An Adaptive Deep-Ensemble Anomaly- Based Intrusion Detection System for theInternet of Things	0187
	SESSION 7: Al	RTIFICIAL INTELLIGENCE AND MACHINE LEAR	NING
07.1	1570715507	Machine Biometrics - Towards Identifying Machines in a Smart City Environment	0197
07.2	1570716010	Towards Machine Learning and Low Data Rate iot for Fault Detection in Data Driven Predictive Maintenance	0202
07.3	1570715699	Cataract detection using convolutional neural network with vgg-19 model	0209
07.4	1570715973	Class Insight: A Student Monitoring System With Real-Time Updates UsingFace Detection and Eye Tracking	0213
SESSI	ON 8: CLOUD COM	MPUTING, CAD DESIGN AND COMPUTATIONAL I	NTELLIGENCE
08.1	1570712367	Development of a MATLAB Web-based Application for Calculating Ionospheric Scintillation Proxy Indexes (s4p-1 and s4p-2) and the Rate of Total Electron Content Index (roti)	0221
08.2	1570716471	A novel biphasic neuron encoder implementation	0226
08.3	1570716171	Mutually Private Verifiable Machine Learning As-a- Service: A Distributed Approach	0232
08.4	1570712601	Recent Challenges for Haptic Interface and Control for Robotic Assisted Surgical Training System: A Review	0240
08.5	1570716105	Robustness Analysis of Cyber-Physical Systems Based on Discrete Timed Cyber-Physical Models	0250
	SESSION 10: A	RTIFICIAL INTELLIGENCE AND MACHINE LEAR	NING
10.1	1570716127	Emotion Detection of Textual Data Interdisciplinary Survey	0255
10.2	1570716215	Multi-Class Text Classification Using Machine Learning Models for Online Drug Reviews	0262
10.3	1570716175	Activity & Emotion Detection of Recognized Kidsin CCTV Video for Day Care Using slowfast & CNN	0268
10.4	1570716183	A Distributed Reinforcement Learning Approachfor Power Control in Wireless Networks	0275
10.5	1570716207	A novel browser-based no-code machine learning application development tool	0282
10.6	1570716133	A Survey on Concept-Level Sentiment AnalysisTechniques of Textual Data	0285
	SESSION 11: PATT	ERN RECOGNITION, iot SECURITY AND COMPUT INTELLIGENCE	ATIONAL
11.1	1570715100	Development of an iot Based Smart Baby Monitoring System With Face Recognition	0292

11.2	1570712410	Bistable-Triplet STDP circuit without external memory for Integrating with Silicon Neurons	0297
11.3	1570712869	Riftnet Reconstruction Model for Radio Frequency Domain Waveform Representation and Synthesis	0303
11.4	1570713262	Development of Web Based Tour Package System	0313
11.5	1570715036	A Multiple Access Protocol for MultimediaTransmission Over 5G Wireless Asynchronous Transfer Mode Network	0319
	SESSION 12:	CRYPTOGRAPHY, IOT PROTOCOLS AND ROBOT	ICS
12.1	1570712906	An Automatic Soil Testing Machine for Accurate Fertilization	0325
12.2	1570712465	Study of Behaviors of Motion Models in High-Order Systems	0332
12.3	1570716181	Batching Anonymous and Non- Anonymous Membership Proofs for Blockchain Applications	0342
12.4	1570716029	Automatic Detection of Vehicle Congestion by Using Roadside Unit	0349
12.5	1570715560	Improvement of Verbal and Non-Verbal Communication Skills of Children With Autism Spectrum Disorder Using Human Robot Interaction	0356
	SESS	ION 13: ROBOTICS AND SECURITY FOR IOT	
13.1	1570716047	Image Classification With Knowledge-Based Systems on the Edge for Real-Time Danger Avoidance in Robots	0360
13.2	1570716091	Developing a Mobile Automated Medical Assistant for Hospitals in Bangladesh	0366
13.3	1570716198	A Cost Effective UV Robot for Disinfecting Hospital and Factory Spaces for Covid-19 and Other Communicable Diseases	0373
13.4	1570712643	A lora Enabled iot-Based Air Quality Monitoring System for Smart City	0379
13.5	1570712864	Analysis of the Design Requirements for Remote Internet- Based E-Voting Systems	0386
13.6	1570715806	A Protecting Mechanism Against Double Spending Attack in Blockchain Systems	0391
	SES	SSION 14: IOT ENABLING TECHNOLOGIES	
14.1	1570712652	Analysis of Smart Contract Abstraction in Decentralized Blockchain Based Stock Exchange	0397
14.2	1570716148	A Systematic Approach for Scheduling iot Devices for Effective Load Balancing Based on Deep Sleep	0407
14.3	1570712161	Predictive Maintenance - Bridging Artificial Intelligence and iot	0413

14.4 1570710287 Intelligent Mirai Malware Detection in iot Devices 0420	TIC
Based Access Control Based Access Control O427 SESSION 15: ARTIFICIAL INTELLIGENCE TOOLS, APPLICATIONS AND AUTOMA CONTROL 1570712874 Aggregation of Sentiment Analysis Index with Hesitant Fuzzy Sets for Financial Time Series Forecasting O433 Controller Design and Robustness Analysis for Multi-Phase Wireless Power Transfer System Using H-Infinity Mixed Sensitivity Approach Multichannel Controller Synthesis for the plant withthree Input and Two Output Channels Using Polynomial Matrix Decomposition Vireless Power Transfer by Highly Resonant Technique O452 Decentralized UAV Swarm Control for Multitarget Tracking using Approximate Dynamic Programming O457	TIC
1570712874 Aggregation of Sentiment Analysis Index with Hesitant Fuzzy Sets for Financial Time Series Forecasting 1570716247 Controller Design and Robustness Analysis for Multi-Phase Wireless Power Transfer System Using H-Infinity Mixed Sensitivity Approach 1570712701 Multichannel Controller Synthesis for the plant withthree Input and Two Output Channels Using Polynomial Matrix Decomposition 1570713073 Wireless Power Transfer by Highly Resonant Technique 1570715873 Decentralized UAV Swarm Control for Multitarget Tracking using Approximate Dynamic Programming 0453	
Fuzzy Sets for Financial Time Series Forecasting 15.1 Controller Design and Robustness Analysis for Multi-Phase Wireless Power Transfer System Using H-Infinity Mixed Sensitivity Approach 1570712701 Multichannel Controller Synthesis for the plant withthree Input and Two Output Channels Using Polynomial Matrix Decomposition 1570713073 Wireless Power Transfer by Highly Resonant Technique 1570715873 Decentralized UAV Swarm Control for Multitarget Tracking using Approximate Dynamic Programming 0433 0440 0440 0440 0440	
Wireless Power Transfer System Using H-Infinity Mixed Sensitivity Approach 1570712701 Multichannel Controller Synthesis for the plant withthree Input and Two Output Channels Using Polynomial Matrix Decomposition 1570713073 Wireless Power Transfer by Highly Resonant Technique 0452 Decentralized UAV Swarm Control for Multitarget Tracking using Approximate Dynamic Programming 0457	
Input and Two Output Channels Using Polynomial Matrix Decomposition 1570713073 Wireless Power Transfer by Highly Resonant Technique 0452 Decentralized UAV Swarm Control for Multitarget Tracking using Approximate Dynamic Programming 0457	
Decentralized UAV Swarm Control for Multitarget Tracking using Approximate Dynamic Programming 0457	
1570715873 using Approximate Dynamic Programming 0457	
SESSION 16: IOT ENABLING TECHNOLOGIES, SECURITY AND DATA MINING	
1570712878 Applicability of iot for Smart Agriculture: Challenges & Future Research Direction 0462	
First Enriched Legal Database in Bangladesh With Efficient Search Optimization and Data Visualization for Law Students and Lawyers 1570712903 First Enriched Legal Database in Bangladesh With Efficient Search Optimization and Data Visualization for Law Students and Lawyers	
1570712392 Regulatory compliance modelling using risk management techniques 0474	
1570711104 Zero-effort indoor continuous social distancing monitoring system 0482	
1570711725 Improving the Relevance of a Web Navigation Recommender System Using Categorization of Users' Experience 0486	
SESSION 17: IOT, DATA MINING AND CLOUD COMPUTING	
17.1 1570715449 Blind Attack Flaws in Adaptive Honeypot Strategies 0491	
1570712921 Women in AI: Barriers and Solutions 0497	
17.3 1570713129 CR-LPWAN: Issues, Solutions and research directions 0504	