

2020 2nd International Conference on Advanced Information and Communication Technology (ICAICT 2020)

**Dhaka, Bangladesh
28 – 29 November 2020**



**IEEE Catalog Number: CFP20Z45-POD
ISBN: 978-1-6654-2240-6**

**Copyright © 2020 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:	CFP20Z45-POD
ISBN (Print-On-Demand):	978-1-6654-2240-6
ISBN (Online):	978-0-7381-2323-3

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

CURRAN ASSOCIATES INC.
proceedings
.com

ICAICT 2020

2nd Int'l Conference on Advanced Information & Communication Technology

United International University, Dhaka, Bangladesh
28 - 29 November, 2020



Technical Co-Sponsor:
IEEE
IEEE Bangladesh Section

Organized by:
UNITED INTERNATIONAL UNIVERSITY

2020 2nd International Conference on Advanced Information and Communication Technology (ICAICT)

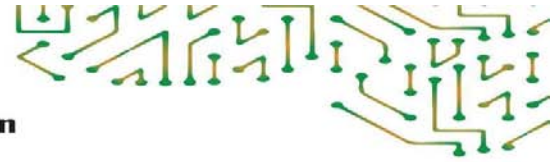
IEEE ICAICT-2020 TABLE OF CONTENTS

Paper ID	Paper / Article Title	Page Number
23	Investigation on High Frequency Based Ultrasound Tissue Therapy by Finite Element Method	01-06
33	Design of a Microstrip Patch Antenna for both C-band and X-band Applications.	07-10
34	IoT based Low-Cost Gas Leakage, Fire, and Temperature Detection System with Call Facilities	11-16
49	Effective Pitch Estimation using Canonical Correlation Analysis	17-22
53	An Effective Diabetes Prediction System Using Machine Learning Techniques	23-28
58	Comparative Study of Machine Learning Approaches on Diagnosing Breast Cancer for Two Different Dataset	29-34
72	Permission-Based Blockchain with Proof of Authority for Secured Healthcare Data Sharing	35-40
73	Sensing of Illicit Drugs and Toxic Chemicals in Terahertz Region using Photonic Crystal Fiber	41-46
74	A Cost-Effective Multisensor Based Framework to Assist Visually Disable Person	47-52
76	3D bone shape reconstruction from 2D X-ray images using MED Generative Adversarial Network	53-58
77	Optimization of Surface Plasmon Resonance Biosensor for Analysis of Lipid Molecules	59-64

ICAICT 2020

2nd Int'l Conference on Advanced Information & Communication Technology

United International University, Dhaka, Bangladesh
28 - 29 November, 2020



Technical Co-Sponsor:
IEEE
IEEE Bangladesh Section

Organized by:
UNITED INTERNATIONAL UNIVERSITY

2020 2nd International Conference on Advanced Information and Communication Technology (ICAICT)

78	Loss Reduction and Voltage Profile Renovation with Optimum Sizing and Siting of Distributed Generation in Distribution Network	65-70
80	Low Loss Anisotropic Nested Hollow Core Antiresonant Fiber	71-76
84	Health Monitoring of Expecting Mothers using Multiple Sensor Approach: "Preg Care"	77-82
94	IoT Based Medical Assistant for Efficient Monitoring of Patients in Response to COVID-19	83-87
101	Detecting Emotion of Users' Analyzing Social Media Bengali Comments Using Deep Learning Techniques	88-93
104	Characterization of stiffness of micro-particle trapped in dielectrophoretic-microfluidic device	94-98
106	Determination of crystallite parameters of ZnO nanoparticles based on annealing temperature	99-104
120	Non-subsampled Shearlet Entropy and Logistic Regression Based Multiple Sclerosis Detection	105-110
124	Prediction of Liver Disorders using Machine Learning Algorithms: A Comparative Study	111-116
125	Human Robot Interaction System for Behavioral Improvement of Autistic Children	117-122
126	An Approach to Mitigate Composition Attacks on Privacy in Non-coordinated Environments	123-128
135	Wearable Multifunctional Computer Mouse Based on EMG and Gyro for Amputees	129-134

ICAICT 2020

2nd Int'l Conference on Advanced Information & Communication Technology

United International University, Dhaka, Bangladesh
28 - 29 November, 2020



Technical Co-Sponsor:
IEEE
IEEE Bangladesh Section

Organized by:
UNITED INTERNATIONAL UNIVERSITY

2020 2nd International Conference on Advanced Information and Communication Technology (ICAICT)

138	Design and Feasibility Analysis of Hybrid Renewable Power System Connected to Grid in Maheshkhali Island, Bangladesh	135-139
140	ECG Heartbeat Classification Using Ensemble of Efficient Machine Learning Approaches on Imbalanced Datasets	140-145
144	Performance Comparison of Different Convolutional Neural Network Architectures for Plant Seedling Classification	146-150
150	Bangla Handwritten Character Recognition Using Deep Convolutional Autoencoder Neural Network	151-156
159	A Comparative Study of Tuberculosis Detection Using Deep Convolutional Neural Network	157-161
163	Word Completion and Sequence Prediction in Bangla Language Using Trie and a Hybrid Approach of Sequential LSTM and N-gram	162-167
167	Predictive Analysis of the Effects of Personality Traits on an Academic Program	168-172
178	Design of an Automated Vehicle Speed Detector and Surveillance System for Bangladesh	173-177
207	Simultaneous Computation of Arithmetic Logic Operation Based on Polarized Optical Shadow Casting Method	178-182
215	Energy Harvesting Technology from Human Motion	183-188
216	4-bit Wallace and Dadda Multiplier design using novel hybrid 3-2 Counter	189-194
217	Performance Comparison of Asymmetric Seven Level Inverter for Solar Photovoltaic Systems	195-200

ICAICT 2020

2nd Int'l Conference on Advanced Information & Communication Technology

United International University, Dhaka, Bangladesh
28 - 29 November, 2020



Technical Co-Sponsor:
IEEE
IEEE Bangladesh Section

Organized by:
UNITED INTERNATIONAL UNIVERSITY

2020 2nd International Conference on Advanced Information and Communication Technology (ICAICT)

221	Remote ECG Monitoring and Syncope Detection System Using Deep Learning	201-206
225	Electronic Band Structure of Group IV 2D Materials: Graphene, Silicene, Germanene, Stanene using Tight Binding Approach	207-212
226	Building A Wheelchair Controlling and Fall Detection System Using Mobile Application	213-218
228	River Water Quality Analysis and Prediction Using GBM	219-224
236	Design and Analysis of a Miniaturized Ku-Band Corrugated Conical Horn Antenna for Satellite Applications	225-228
239	IoT based Smart Weather Monitoring System for Poultry Farm	229-234
240	A simplistic approach to design a prototype of smart home for the activation of home appliances based on Electrooculography(EOG).	235-239
252	A Model for Automatic Partial Evaluation of SQL Queries	240-245
261	A Low-Cost Automatic Intravenous Fluid Control System for Medical Treatment	246-250
262	Harmonic Distortion Reduction of Transformerless Inverter's Output Voltage Using 5-Level Single-Phase Inverter and LCL Filter	251-256
267	Instance Segmentation of Visible Cloud Images Based on Mask R-CNN Applying Transfer Learning Approach	257-262
269	Performance Investigation of Phase-over-Sampler based Hybrid Beamformer for mmWave Massive MIMO Systems	263-268

ICAICT 2020

2nd Int'l Conference on Advanced Information & Communication Technology

United International University, Dhaka, Bangladesh
28 - 29 November, 2020



Technical Co-Sponsor:
IEEE
IEEE Bangladesh Section

Organized by:
UNITED INTERNATIONAL UNIVERSITY

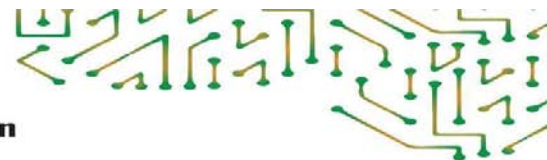
2020 2nd International Conference on Advanced Information and Communication Technology (ICAICT)

270	Deep Learning Enabled Joint Adaptive Compressive Channel Sensing and Hybrid Beamforming for mmWave Cellular Systems	269-274
272	Iris-Pupil Thickness based Biometric Approach for Determining Age Group using Linear SVM	275-279
274	Convolutional Neural Network Based Optimization Approach for Wireless Resource Management	280-285
276	Sensor-Based Human Activity Recognition: A Comparative Study of Machine Learning Techniques	286-290
285	A Secured Smart National Identity Card Management Design using Blockchain	291-296
286	A study of Cesium Titanium Bromide based perovskite solar cell with different Hole and Electron transport materials	297-301
287	Analysis of the Morphological Changes of the River Padma Along Naria Upazila through Supervised Classification of Satellite Images	302-307
290	A Data Enhancement Approach to Improve Machine Learning Performance for Predicting Health Status Using Remote Healthcare Data	308-312
292	Charge-voltage and capacitance-voltage characterizations of monolayer MoS ₂ -based DG n-TFET	313-318
296	Intelligent System for Predicting Suicidal Behaviour from Social Media and Health Data	319-324
301	High-Efficiency Single Phase Passive LC3 Component AC-DC Buck-Boost Converter	325-329
303	A Data Selection Methodology to Train Linear Regression Model to Predict Bitcoin Price	330-335

ICAICT 2020

2nd Int'l Conference on Advanced Information & Communication Technology

United International University, Dhaka, Bangladesh
28 - 29 November, 2020



Technical Co-Sponsor:
IEEE
IEEE Bangladesh Section

Organized by:
UNITED INTERNATIONAL UNIVERSITY

2020 2nd International Conference on Advanced Information and Communication Technology (ICAICT)

304	Analysis of the Effect of Atherosclerosis with the Changes of Hematocrit: A Computational Study on the Hemodynamics of Carotid Artery	336-341
306	Smoothness Priority Approach Based Epileptic Seizure Classification Using ANN	342-347
307	Design of a Compact Triple-Band Patch Antenna for Bluetooth, ZigBee, Wi-Fi and WUSB Technology	348-352
308	Parked Car-based Clustering Hierarchy in Vehicular Ad Hoc Network for Energy Efficiency	353-358
310	Central Lane-based Life Time Routing Protocol in Vehicular Ad Hoc Network	359-363
312	Performance of Fiber Optic MW-OCDMA System in Presence of XPM Effect	364-369
314	Use of Bowtie-shaped Nanoapertures and Spherical Plasmonic Metal Nanoparticles to Improve the Opto-electronic Performance of Thin-film Solar Cells	370-375
315	Demand Side Residential Load Management System for Minimizing Energy Consumption Cost and Reducing Peak Demand in Smart Grid	376-381
317	Novel SPR biosensor with Simple PCF Structure of Hexagonal Lattice Operating in Near-IR	382-386
320	Classification for the P300-based Brain Computer Interface (BCI)	387-391
321	Analysis of Social Media Data to Classify and Detect Frequent Issues Using Machine Learning Approach	392-397
328	Investigation of the Carrier Dynamics and Electrical Pumping Behavior of InAs/GaAs Quantum Dot Lasers	398-403

ICAICT 2020

2nd Int'l Conference on Advanced Information & Communication Technology

United International University, Dhaka, Bangladesh
28 - 29 November, 2020



Technical Co-Sponsor:
IEEE
IEEE Bangladesh Section

Organized by:
UNITED INTERNATIONAL UNIVERSITY

2020 2nd International Conference on Advanced Information and Communication Technology (ICAICT)

331	BlinkFruity: A Real-Time EEG Based Neurofeedback Game for Brain-Computer Interface	404-409
332	Iot Based Smart Inhaler For Context-Aware Service Provisioning	410-415
333	Influence of Particle Shape on the Ability of Plasmonic Metal Core-Silica Shell Nanoparticles Embedded within the Absorbing Layer to Enhance the Opto-electronic Performance of Thin-Film Solar Cells	416-421
335	An Extensive Analysis of the Effect of Social Distancing in Transmission of COVID-19 in Bangladesh by the Aid of a Modified SEIRD Model	422-427
338	Performance Analysis of Steganography Tools	428-433
339	Classification of Sign Language Characters by Applying a Deep Convolutional Neural Network	434-438
342	Evaluating and Enhancing the Performance of Skin Disease Classification Based on Ensemble Methods	439-443
351	Comparative Study of Deep Learning based Finger Vein Biometric Authentication Systems	444-448
357	6LoWPAN Based Futuristic Smart Architecture for Home Automation	449-454
362	An Integrated Radiation Estimation System in Health Facilities to Identify Potential Health Risks	455-459
372	DistB-CVS: A Distributed Secure Blockchain based Online Certificate Verification System from Bangladesh Perspective	460-465
380	Implementing Demand Response in The Residential Energy System to Solve Duck Curve Problem	466-470

ICAICT 2020

2nd Int'l Conference on Advanced Information & Communication Technology

United International University, Dhaka, Bangladesh
28 - 29 November, 2020



Technical Co-Sponsor:
IEEE
IEEE Bangladesh Section

Organized by:
UNITED INTERNATIONAL UNIVERSITY

2020 2nd International Conference on Advanced Information and Communication Technology (ICAICT)

385	LULC classification by semantic segmentation of satellite images using FastFCN	471-475
387	A Data Change Rule Based Empirical Framework for Labeling Unlabeled Time Series Driving Data	476-479
390	An Automated Approach to White Blood Cell Classification Using a Lightweight Convolutional Neural Network	480-483
392	EEG-based Cognitive Load assessment in Matlab GUI and impact on Learning System	484-487
394	An area efficient low power Phase-Frequency Detector for PLL Applications	488-491
417	Voltage Sag Compensation in Distribution System Using Dynamic Voltage Restorer	492-497
419	Enhancement of Subthreshold Performance by Introducing Hetero Dielectric in Double Gate PNP Tunnel FET	498-502
431	Classification of Bearing Fault Using Radial Basis Neural Network and Genetic Algorithm	503-508