# 2020 International Conference on Wireless Communications Signal Processing and Networking (WiSPNET 2020)

Chennai, India 4 – 6 August 2020



IEEE Catalog Number: ISBN: CFP20D52-POD 978-1-7281-4130-5

# 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:    | CFP20D52-POD      |
|-------------------------|-------------------|
| ISBN (Print-On-Demand): | 978-1-7281-4130-5 |
| ISBN (Online):          | 978-1-7281-5284-4 |

### 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





#### **Technical Papers**

| Session     | 1   |
|-------------|---|
| Date / Time | 4 <sup>th</sup> August 2020 (Tuesday) / 1:00 PM-4:00 PM                                 |
| Venue       | Online  |
| Chair(s)    | Dr. P. Vijayalakshmi & Dr. N. Edna Elizabeth, Professors,<br>SSN College of Engineering |

- 24. Detection of Potato Disease Using Image Segmentation and Machine Learning.....43 Md. Asif Iqbal, Kamrul Hasan Talukder
- 30. Wyner-Ziv Coding of Chroma in Wireless Capsule Endoscopy Image Compression using Deep SideInformation Generation.....58 Sushma B, Binish Fatimah
- **41. Ground based remote sensing of aerosols using AERONET in Indian Region.....72** *Anitha M, Lakshmi Sutha G*
- 77. Brain Signal Analysis for Mind Controlled Type-Writer Using a Deep Neural Network.....149 Rohini Das, Sayan Goswami, Sayantani Ghosh, Mousumi Laha, Chandrima Debnath, Amit Konar
- **78. Evaluation of Brain Signal Analysis for Subjective Aesthetic-Appreciation Using Type-2 Fuzzy Sets.....154** *Madhuparna Das, Chandrima Debnath, Mousumi Laha, Amit Konar*
- **80. Development of Budget Friendly Wireless Access Point to Use in Littoral Environments.....164** *Pranav Burugadda, Janapala Nithiswara Reddy, Nadella Harshith, Arya Lekshmi A, Sai Shibu N B, Arjun D, Sethuraman N Rao*
- **93. Detection Of Food Quality and Quantity at Cold Storage using IoT.....200** *Bikrant Sarmah, Aruna G*

| Session     | 2  |
|-------------|--|
| Date / Time | 4th August 2020 (Tuesday) / 1:00 PM-4:00 PM                                      |
| Venue       | Online   |
| Chair(s)    | Dr. N. Venkateswaran & Dr. A. Jawahar, Professors,<br>SSN College of Engineering |

- **46. Performance Analysis of Cooperative Full Duplex NOMA system in Cognitive Radio Networks.....84** Vajja Santosh Babu, Deepan Nagarajan, Rebekka Balakrishnan
- 54. Implementation and Performance Analysis of Multiuser Detector for Massive MIMO OFDM system over Rayleigh channel.....102

She in Shoukath, P.A Haris



57. Antenna Array Beam Scanning and SINR Visualization on a Map for 5G Urban Macro-Cell Test Environment.....107

Shruti Soumya Panigrahi, Guru Prasad Mishra, Biswa Binayak Managaraj

- **59.** Optimal Spectrum Sensing in Cognitive Radio Systems Using Signal Segmentation Algorithm.....118 *K Kirubahini, J D Jeba Triphena, P G S Velmurugan, S J Thiruvengadam*
- **71. Backscatter-assisted Wireless Powered Communication Networks with Multiple Antennas.....135** Deepan Nagarajan, Rebekka Balakrishnan
- 81. A Novel Group-Based Authentication and Key Agreement Protocol for IoT Enabled LTE/LTE–A Network.....168

Mou Adhikari, Prabhat Kumar Panda, Sudipta Chattopadhyay, Suvaditya Majumdar

**92.** Capacity and Radiation Pattern analysis using Analog Beamforming in Millimeter wave systems.....195 Sabyasachi Bhattacharyya, Manupati Saikumar, Aruna G

| Session     | 1   |
|-------------|---|
| Date / Time | 5 <sup>th</sup> August 2020 (Wednesday) / 12:45 PM-3:45 PM                                    |
| Venue       | Online  |
| Chair(s)    | Dr. R. Amutha, Professor & Dr. R. Kishore, Associate Professor,<br>SSN College of Engineering |

- **3.** Classification of daily human activites using wearable inertial sensor.....1 K Ashwini, R Amutha, R Rajavel, D Anusha
- 14. Low Cost Data Glove for Hand Gesture Recognition by Finger Bend Measurement.....25 Manas Bhuyan, Anjan Kumar Talukdar
- **16.** Comparative Analysis of Communication Technologies for an Aerial IoT over Collapsed Structures.....32 Divyasree Mohan Menon, Sai Shibu N B, Sethuraman N Rao
- **32. Distributed Algorithms for QoS in Wireless Ad Hoc Networks Under the Primary Interference Model.....63** *Ashwin Ganesan*
- 44. Detection and Location Estimation of Transmitter Using the Gradient of the Power Gravity Point for Dynamic Spectrum Sharing.....78 *Hiromi Matsuno, Yoshio Kunisawa, Takahiro Hayashi*
- 79. Optimizing Capacity-Throughput Tradeoff for Enhanced Spectrum Sensing in CSS Based Cognitive Home Area Network.....159 Suvaditya Majumdar, Sudipta Chattopadhyay, Vaishna Biswas, Suman Roy Ghatak
- **86. UNet architecture based dental panoramic image segmentation.....187** Sivagami S, Chitra P, Sri Ram Kailash G, Muralidharan S.R.



| Session     | 2  |
|-------------|--|
| Date / Time | 5 <sup>th</sup> August 2020 (Wednesday) / 12:45 PM-3:45 PM   |
| Venue       | Online   |
| Chair(s)    | Dr. M. Muthumeenakshi & Dr. M. Gulam Nabi Alsath , Associate Professors,<br>SSN College of Engineering |

- **51. Compact CPW-Fed Multiband F-Shaped Slot Antenna for Wireless Communications.....92** Budhadeb Maity, Sisir Kumar Nayak
- 52. Dual Band, Dual Slant ±45° Polarized 2x2 MIMO (8T 8R) Antenna Array with Low Mutual Coupling for A-LTE(4G) Band 41/42/43(5G) BTS Application.....97 Vadlamudi Roja, D Sriram Kumar
- **58. Designing of Triple Band Rejection CPW Feed Circular UWB Antenna.....112** *Gulshan Kumar, Sonu Jain, Ajay Yadav, Mamta Devi Sharma*
- **68.** CPW-Fed Double Circular Ring Slot Wideband Antenna for WLAN/WiMAX Applications.....122 Budhadeb Maity, Sisir Kumar Nayak
- 70. Design and Analysis of Wrench-Shaped Multiple Input Multiple Output Antenna for UWB Applications.....130 Tathababu Addepalli, V.R Anitha
- 73. Frequency Reconfigurable Dual Notch UWB Antenna.....139 Gulshan Kumar, Ajay Yadav, Rajendra Prasad Yadav
- 82. Dual Band Frequency Selective Surface for WiMAX/WLAN Band Application.....173 Nikesh Garg, Sonu Jain, Ajay Yadav, Mamta Devi Sharma

| Session     | 1   |
|-------------|---|
| Date / Time | 6 <sup>th</sup> August 2020 (Thursday) / 12:45 PM-3:45 PM   |
| Venue       | Online  |
| Chair(s)    | Dr. V. Premanand Chandramani , Professor &<br>Dr. N. Prabagarane, Associate Professor, SSN College of Engineering |

- **10.** Automatic Virtual Switching of Adaptive Backhaul Equipment for Marine Internet Applications.....15 Gaushik M R, Jivthesh M R, Arjun D, Dhanesh Raj, Sethuraman N Rao
- **18.** Single Image Haze Removal using a Generative Adversarial Network.....37 Bharath Raj Nagoor Kani, Venketeswaran N
- **37. Temporal Feature Extraction for Improving Myoelectric based Recognition of Prosthetic Hand.....67** Smita Bhagwat, Prachi Mukherji



- **69.** Correcting low-illumination images using multi-scale fusion in a pyramidal framework.....126 Swadhin Das, Manali Roy, Susanta Mukhopadhyay
- **75. LDR based Power Consumption of Vehicle Tracking System.....145** Harshith Nadella, Gayathri Narayanan, Prabhat Gouda, Shwetha Krishnan, Abhijeet Gupta, Anurag Marripelly
- 83. Outage Performance Comparison of Dual-Hop Half/Full duplex Wireless UAV system over Weibull Fading Channel.....177

Mitali Gupta, Anandpushparaj Jeganathan, Muthuchidambaranathan P, Dushantha Nalin K Jayakody

| Session     | 2   |
|-------------|---|
| Date / Time | 6 <sup>th</sup> August 2020 (Thursday) / 12:45 PM-3:45 PM   |
| Venue       | Online  |
| Chair(s)    | Dr. R. Jayaparvathy ,Professor & Dr. R. Hemalatha, Associate Professor,<br>SSN College of Engineering |

- **04. Enhanced Logistics Security Techniques using IoT and 5G.....7** *Adeel Masood, Anurag Gupta*
- 13. A Novel Global Motion Estimation and Compensation Framework in Compressed Domain for Sign Language Videos.....20 Anjan Kumar Talukdar, Manas Bhuyan

.

28. Raphael- The Smart Helmet.....48 Lokeshwaran M, Nikhit Mathew S P, Joshuva A

- **29. EMG-Based Control of a 5 DOF Robotic Manipulator.....52** S Gowtham, K M Adithya Krishna, Taarun Srinivas, R G Pranav Raj, A Joshuva
- **50.** Low Cost VoIP Service for Marine Fishermen Development and Performance Evaluation.....88 Harshith Nadella, Charitha Nagamalla, Sai Shibu N B, Arjun D, Sethuraman N Rao
- **85.** Physical Layer Secured Polar Codes with Optimal Jamming Position.....182 Devi S, V N Senthilkumaran
- **88.** Area Optimization of CMOS Full Adder Design Using 3T XOR.....192 Somashekhar Malipatil, Vikas Maheshwari, Bhanu Chandra Marepally