



**MADANAPALLE INSTITUTE OF TECHNOLOGY & SCIENCE
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Department of Electronics & Communication Engineering

Report on
**Five days Short Term Course on Emerging Topics on Instrumentation, Electronics
and Communications**
From 27th Oct to 31st Oct 2021

Report Submitted by: Dr. Pradosh Ranjan Sahoo, Associate Professor, (Co-convenor)
Department of Electronics and Communication Engineering

No. of Participated – 96 (Faculty:34 and Students: 62)



Neural Network Configuration 1

$$h_1 = h_2 = \varphi = \frac{1}{1 + e^{-(a_i)}}$$

$$a_1 = a_2 = W_1 x_i + b_1$$

$$a_2 = W_2 h_1 + b_2$$

$$a_3 = W_3 h_2 + b_3$$

- 1 Neuron in the output layer

output layer

W_3

hidden layer L (3)

W_2

hidden layer (16)

W_1

input layer

$x_1, x_2, x_3, x_4, x_5, x_6, x_7, x_8, x_9, x_{10}, x_{11}, x_{12}, x_{13}$

h_1, h_2

a_1, a_2, a_3

b_1, b_2, b_3

φ

-1

ETIEC-2021 @ Deptt. of ECE, Madanapalle Institute of Technology & Science

27 Oct 2021 7

Meeting in "General"

06:54

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DL
David Lalrochiu...

DB
Debabrata ...

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Naveensa. K

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28°C Haze 12:41 31-10-2021

52:44

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Presenters (40)

CASE 1: PERFORMANCE EVALUATION OF CONTROLLER

Communication topology : Ring Topology

- Primary control is always active
- At $t = 1.5$ s, secondary control is activated and it restores all DGs output voltages/frequency to their nominal values in 0.25s approx.
- At $t = 2.5$ s load 1 is increased.
- It causes the voltage/frequency drop, but proposed secondary control scheme restores the voltage/frequency in 0.23 s approx.
- At $t = 3.5$ s load 3 is disconnected from the MG network, proposed secondary control scheme restores the voltage/frequency after small transient time 0.22 s approx.

21

19:43

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Issues related to Limitation of Spectral Efficiency

Mediocre performance at most places!

Cell densification is not a solution
Higher frequencies makes it worse

Pathloss exp: 3
Cell edge: 5-10 dB

The resource person were: **Dr. Debi Prasad Das** is principal scientist, IIMT, CSIR lab, Bhubaneswar, **Dr. R. Raja Sekar**, is Assistant Professor in Department of Computer Science and School of Computing, Kalasalingam Academy of Research and Education, Srivilliputhur, Viruthunagar., **Dr. Siddharth Chaurasia**, Senior Scientist, TCS, **Dr. Veningston K**, Assistant Professor in the department of Computer Science and Engineering at NIT Srinagar, **Prof. V S Tripathi**, Director and Professor in the department of Electronics and Communication Engineering at MNNIT Allahabad, **Mr. A. Nagaraju**, Senior Scientist, CSIR-CEERI, **Dr. Yaswanth Kalepu**, is an Assistant Professor in the department of Electronics and Communication Engineering at IIITDM Kurnool, **Dr. Rajanikanta Swain**, Tech Lead (Antenna

Design), **Prof. Bidyadhar Subudhi** is professor and Dean R&D in the School of Electrical Science, IIT Goa **Dr. Santosh Kumar Behera** is principal scientist in IMMT CSIR BBSR, **Mr Udaya Kumar Sahoo**, is working as Research Scientist ISRO, **Er. Ambuja Kumar Nath**, Senior Design Engineer, BHEL Bangalore, **Mr. Manas Ranjan Biswal**, Pukyong National University, South Koera, **Dr. Harigovindan V.P.** is an assistant professor, in the dept. of ECE at NIT Puducherry, **Dr Tasher Ali** is Sr Assistant Professor in the dept. of ECE, MITS, **Dr Debajit De**, Senior R&D Engineer at ACE Technologies, **Dr. Jitendra bahadur**, Post Doctral Fellow, Chung-Ang University, Seoul, South Korea, and **Dr Upendra Verma** is Sr Assistant Professor in the dept. Of ECE, MITS, Madanapalle.

The department of Electronics and Communication Engineering, MITS, Madanapalle organized a **5 days short-term course** on the topic “**Emerging Topics on Instrumentation, Electronics and Communications**” from **27th Oct to 31st Oct 2021**.

Dr. Mahesh M, Dr. Soumya Ranjan Mohapatra, Dr. Sambhudutta Nanda, faculties in the dept. ECE of Madanapalle Institute of Technology & Science coordinated this event. The Chief Patron of this event was Dr. N. Vijayabhaskar Choudary, Secretary & Correspondent, MITS. The Patron of this event was Prof. (Dr.) C. Yuvaraj, Principal of MITS and organizing chair for the event were Dr. P. Ramanathan, VP, MITS and Dr. S. Rajasekaran, HoD, Dept. of ECE, MITS, Madanapalle.

In this STC on **Day-1** first session from 10.30AM to 12.00PM of this STC, **Dr. Debi Prasad Das** was enlighten with the fundamentals of Artificial neural network and conventional neural network. The second session started with topic of Naive Bayes Supervised Classification Algorithm by **Dr. R. Raja Sekar** from 1.00PM-2.00PM. The Day-1 third session was from 2.00PM to 3.00PM and **Dr. Siddharth Chaurasia** was given insights on Ubiquitous Artificial Intelligence. The Day-1, fourth session was handled by **Dr. Veningston K** from 3.00PM-4.00PM and he explained Exploring Deep Neural Networks with hands-on.

On **Day-2** first session from 10.00AM to 11.00AM of this STC, Dr. **Bidyadhar Subudhi** was enlighten with the fundamentals of Multi-agent approach to Control Design and Application. The second session started with topic of Industrial Automation Using LabVIEW by **Dr. Santosh Kumar Behera** from 11.00PM-12.00PM. The Day-1 third session was from 1.00PM to 2.00PM and **Mr Udaya Kumar Sahoo** was given insights on Industrial Automation and Control Using PLC. The fourth session was handled by **Er. Ambuja Kumar Nath** from 2.00PM-3.00PM and he explained Advanced Industrial Automation and Industry 4.0 follwed by hands-on session by **Dr. Santosh Kumar Behera** for another one hour.

On **Day-3** first session from 10.00AM to 11.00AM of this STC, **Prof. V S Tripathi** was enlighten with the fundamentals of Microwave Engineering. The second session started with topic of Electromagnetic Wave Absorbers by **Mr. A. Nagaraju** from 11.00AM-12.00PM. The Day-1 third session was from 1.00PM to 2.00PM and **Dr. Yaswanth Kalepu** was given insights on Role of Electromagnetics in Technology Advancements. The fourth session was handled by **Dr. Rajanikanta Swain** from 2.00PM-4.00PM and he delivered talk on Background, Concepts, Design Methodology and Industrial Aspects on Meta-Antennas.

On **Day-4** first session from 10.00AM to 11.00AM of this STC **Mr. Manas Ranjan Biswal** was enlighten with the Communication Beyond 5G. The second session started with topic of Non Orthogonal Multiple Access (NOMA) for 5G and Beyond Systems by **Dr. Harigovindan V.P.** from 11.00AM-12.00PM. The Day-1 third session was from 1.00PM to 2.00PM and **Dr Tasher**

Ali was given insights on Semi orthogonality test in massive MIMO system. The fourth session was handled by **Dr Debajit De** from 2.00PM-3.00PM and he delivered talk on 5G & It's Beyond for Sub-6 GHz.

On **Day-5** first session from 10.00AM to 11.00AM of this STC **Dr. Jitendra bahadur** had delivered his valuable talk on Development of nano materials for electronics applications and followed by hands-on session by dr. Upendra Verma on Modeling and Simulation of Organic Semiconductor Devices using GPVDM from 11.00 AM to 12.00PM.

In the Day-5 third session from 12.00PM onwards **Valedictory function** was conducted in presence of all the participants and resource persons. Dr. Tahir Ali welcome all the participants and Resource persons and Dr. K Sathesh spoken few words about the last 5 days lectures of this STC. We also taken the feedback of this STC from the participants. At last Dr. Tasher Ali Sheikh given vote of thanks to all the resource person, participants and also given thanks to the management of MITS, Principal sir, Vice principal sir, HOD ECE sir and all the faculty and staffs members of ECE dept for your support and cooperation. Also thank to the technical team of MITS for their constant support during the online session of this STC. The session is ended with some photo graph.