

ONLINE Workshop on Machine Learning, Deep learning and Computational intelligence for wireless communication(with Illustrations using MATLAB)

‘MDCWC 2022’

30th May to 24th June 2022 (Duration: 6.00 to 9.00 P.M.)

- Last date for registration: 30th April 2022(First Come First Served)
- Maximum number of Registration = 30

Topics covered

Module 1:

Parametric approach to Linear regression (Maximum Likelihood Estimation, Least square estimation) Regularization technique, Bayes technique, Kernel smoothing and Gaussian process technique, Dimensionality reduction techniques: Principal Component Analysis, Linear Discriminant Analysis, Kernel Linear Discriminant Analysis and Independent Component Analysis, Probabilistic discriminative model: Perceptron, Multiple class Logistic regression, Support Vector Machine Probabilistic generative model: Gaussian Mixture Model (Combinational model), Generative Model: Hidden Markov Model, Artificial Neural Network Introduction to Deep learning techniques: Convolution Neural Network, Auto encoder, Generative Adversarial Network, Graph Neural Network, Long Short Term Memory, Recurrent Neural Network, Particle Swarm Optimization, Ant colony Optimization.

Target Audience:

UG, PG, Scholars, Faculty from Engineering colleges and universities and participants from Industry. Participants are strongly encouraged to have Matlab software installed in their system to execute the code described during the illustration session.

About the course:

The course aims on strengthening the mathematical foundations involved in wireless communication, machine learning, deep learning and computational intelligence using illustrations using Matlab. Evening classes are offered to facilitate working professionals. Participants will also get the chance to get the paper published in the Machine Learning for wireless Communication with Simulation Illustrations, Signals and Communication Technology series, springer publications, Co-Edited by the event Co-ordinator Link (Papers will be subjected to regular Review process). Guest sessions on the state-to-the-art techniques will also be handled by Foreign and Indian experts on the related topics.

- Online portal: Webex (Link will be shared for the registered participants)
- Link to website: [MDCWC2022](#)

Module 2:

Mathematical model of Time varying wireless channel model: Coherence time, Doppler spread, Coherence frequency and Delay spread Rayleigh, Rician, kappa-mu, eta-mu model, Detection theory: Bayes, Mini-Max and Neyman-pearson technique Estimation theory: MMSE, MMAE and MAP technique, Mathematical model of base band transmission and its Spectral density computation. Relationship between Base and Band pass transmission. Computation of spectral density PSK,QPSK,FSK,MSK, Power Spectral estimation using periodogram, Barlett, Welch and the Blackman-Tuckey method, Multiple Input Multiple Output channel model and Massive MIMO, mmWave channel model Ray tracing model, Beam forming, NOMA, Spatial Modulation, OFDM, Water fill algorithm, Case studies on Machine learning algorithm in Wireless communication.

Co-ordinator:

Dr. E. S. Gopi,
Associate professor,
Department of ECE

| Registration fee | Category | Module 1 (Including GST) (or) Module 2 (Including GST) | Both Modules (Including GST) |
|------------------|---|---|---------------------------------|
| | UG,PG, Research scholars and Faculty | ₹ 6000 | ₹10000 |
| | Industry participants | ₹ 8000 | ₹14000 |

Registration Details:

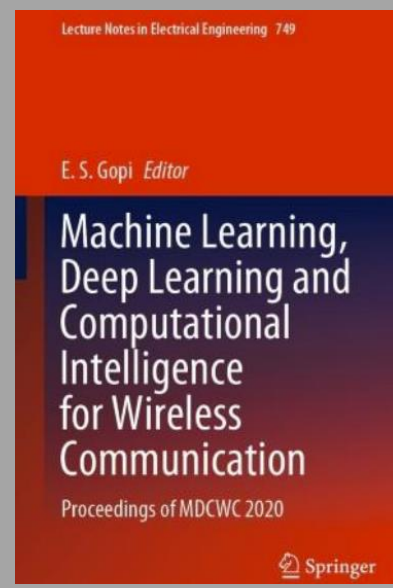
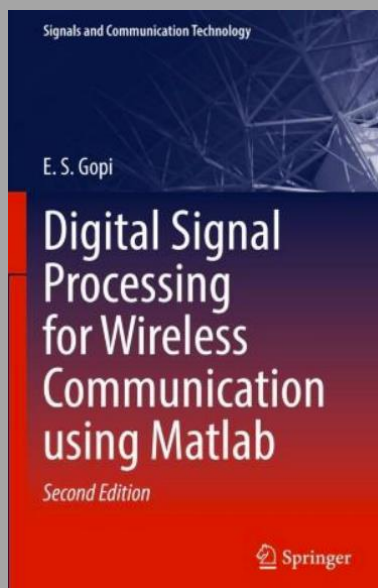
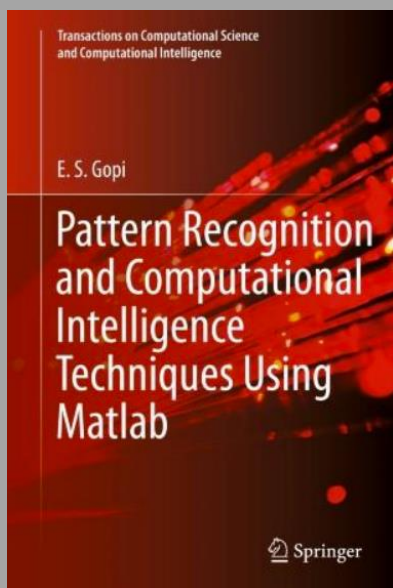
Step 1: Registration needs to done through SBI i-collect: [Link for payment](#)

- Academia module I and II: Proceed->Select: State: Tamil Nadu, Institution: Educational Institutions->Select: CONFERENCE AND WORKSHOP NIT TRICHY- >MDCWC2022 ACADEMIA MODULE I and II.
- Industry module I and II: Proceed->Select: State: Tamil Nadu, Institution: Educational Institutions->Select: CONFERENCE AND WORKSHOP NIT TRICHY- >MDCWC2022 INDUSTRY MODULE I and II

Step2: Fill the Google form ([Link for Registration](#)) (Don't forget to upload the receipt generated from SBI i-collect in the Google form)

Step3: You will get an acknowledgement from mdcwc2022@gmail.com for final confirmation of the registration process.

Course contents will be based on the book authored/edited by the co-ordinator.



Supporting team:

Rajasekharreddy poreddy , mail id: sekharpraja@gmail.com, phone no: 9492900508
 Vinodha k, mail id: vinodhakamaraj@gmail.com, phone no: 9488752949
 Neema m , mail id: neemamnair@gmail.com, phone no: 8129244221
 Simy Baby, mail id: simybaby@gmail.com, phone no: 9447126822
 Contact id: mdcwc2022@nitt.edu (or) mdcwc2022@gmail.com