COMPSIG NITT

In This Issue. . .

Dear friends! COMPSIG NITT is a monthly newsletter to share the research work done in the Pattern recognition and computational intelligence laboratory, Department of Electronics and Communication Engineering, National Institute of Technology Trichy.

Concepts, Ideas pertaining to Computational intelligence, Pattern recognition and Signal processing are also included in this newsletter.

We expect the feedback, comments and articles from you all.

Volume 5,Issue 9: September 2019

Team members

1. **Dr.E.S.Gopi, Co-ordinator.**
2. **G.JayaBrindha, Ph.D. Scholar.**
3. **Neema. M, Ph.D. Scholar.**
4. **Rajasekharreddy Poreddy, Ph.D Scholar.**
5. **Vinodha K, Ph.D Scholar.**
6. **Shailendra Singh, M.Tech, Communication systems.**
7. **Mayank Lauwanshi, M.Tech, Communication systems.**

Scan the QR code for previous issues of our newsletter

PRE-WORKSHOP ON MACHINE LEARNING, DEEP LEARNING AND COMPUTATIONAL INTELLIGENCE FOR WIRELESS COMMUNICATION

The Pre-workshop on Machine Learning,Deep Learning and Computational Intelligence for Wireless Communications was conducted during September 16 - 20, 2019. The total number of participants was 40 which includes faculty, research scholars, Btech/Mtech students from various institutions like ONGC, VNIT, NIT Puducherry, Anna University, IIIT nagpur and other institutions. First day included the topics on Dimensionality reduction techniques, Multiple input multiple output linear regression, Introduction to perceptron and probabilistic discriminative models for multiclass problems. On the second day, probabilistic generative models, maximum likelihood solution, Support Vector machine and its kernel trick, GMM and HMM were discussed. Third day focused on Mutlilayer perceptron, Steepest descent algorithm, Particle Swarm optimization, Ant Colony technique, Auto encoder, Deep reinforcement learning, CNN, Generative Adversarial networks, Recurrent neural networks, Social Emotional optimization algorithm and Socio Evolution & learning optimization. The lectures were delivered by Dr.E.S.Gopi.

On the fourth day forenoon Dr.G. Thavasi Raja discussed about Mobile data localization, Mobility analysis and User localization. Following that Dr.E.S.Gopi discussed on the Data driven applications for wireless communications. In the afternoon session, Dr.B.Rebecca presented the lecture on Wireless sensor networks, Network Control theory and network control security. Fifth day was a complete hands on session using MATLAB where the participants tried to solve simple problems given in the workbook. The pre-workshop was concluded with positive feedbacks from the participants.

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Photographs

Lecture by Dr.E.S.Gopi

Hands on Training

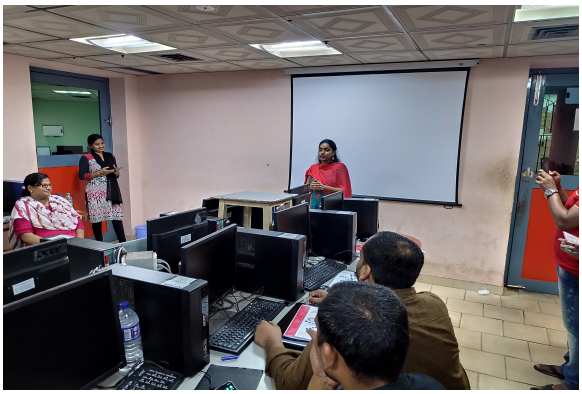
Lecture by Dr.G. Thavasi Raja

Lecture by Dr.B.Rebecca

Volunteers

Feedback by Mr.Sourabh Tiwari(VNIT)

Feedback by Mr.K.G.Gopinath (ONGC)



Feedback by Ms.R.Pavithra (Anna University)

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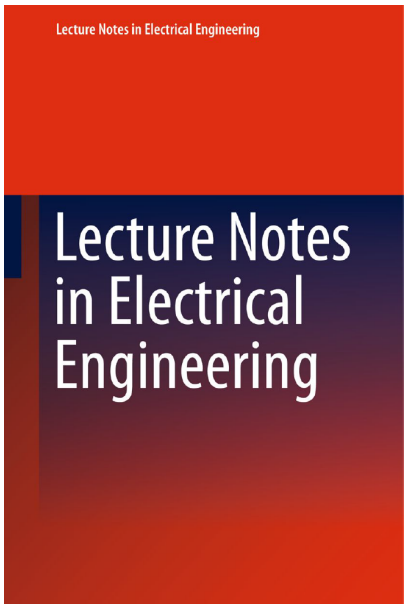
Call for Papers

Machine learning, Deep learning and Computational Intelligence for wireless communication (MDCWC2020) - May 11-13, 2020

Objective of the Workshop

Due to the feasibility of collecting huge data from mobile and wireless networks, there are many possibilities of using Machine learning, Deep-learning and the Computational Intelligence to interpret and to hunt knowledge from the collected data. The workshop aims in consolidating the experimental results integrating the Machine learning, Deep learning and Computational intelligence for wireless communication. The workshop focuses on the following applications. Mobile data analysis, Mobility analysis, Network control and security, Wireless sensor networks, User localization, Mobile Network and Signal processing. Also those applications are implemented using one or more of the following ML, DL and Computational intelligence algorithms like the following.



Machine learning: Multiple input multiple output regression, Probabilistic discriminative approach, Multi-class logistic regression, Probabilistic generative model, Support Vector Machine, Dimensionality reduction techniques.

Deep learning: Multilayer perceptron, Boltzmann Machine, Auto-Encoders, Convolutional Neural Network, Recurrent Neural Network, Generative Adversarial Network, Deep Reinforcement Learning.

Computational Intelligence: Particle Swarm Optimization, Bacterial Foraging, Simulated Annealing, Ant colony technique, Genetic algorithm, Social Emotional Optimization Algorithm (SEOA), Social Evolutionary Learning Algorithm (SELA).

The submissions are subjected to Double review process and the selected papers will be published as the book series Lecture Notes in Electrical Engineering, Springer publication (confirmed). For further details,see to the website.

Link to the Website: MDCWC2020

Paper Template: Template for preparing the paper

Last date for submission of paper for review:November 30^{th} 2019

Paper Submission: Submit paper through Easy chair

Intimation of acceptance of paper:Feb 15^{th} 2020

Submission of camera ready paper (along with audio slides) and registration:March 1^{st} 2020

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Quotes

> *"Let me define a leader. He must have vision and passion and not be afraid of any problem. Instead, he should know how to defeat it. Most importantly, he must work with integrity."* — Dr. A.P.J.Abdul Kalam

On-going Research

- Investigating Regression techniques for solving the sunflower leaf segmentation problem
- Application of machine learning techniques in next generation wireless communication
- Classification of Music composition styles using probabilistic generative model
- Engine health monitoring using Machine learning,Deep learning and Computational intelligence
- Power allocation & Capacity maximization in NOMA using computational intelligence
- Millimeter wave channel estimation using computational Intelligence

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Feedback

COMPSIG NITTT invites articles and innovative ideas from readers for the Reader's Space column. We expect feedback and comments to monthly newsletter COMPSIG NITTT . A facebook group, "COMPSIGNITTT" is created for the readers to share their views. Those who are interested can be a part of the facebook group.

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