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.

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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**

"Pattern Recognition Course" since 2016
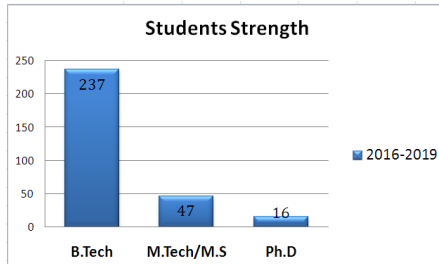
Pattern recognition (ECOE15/ECPE22) was introduced as a global elective for B.Tech students in odd semester since 2016 at NITT. It was common for UG second year, third year and final year students. The course attracted students from non-circuit departments as well. For PG it was offered as Pattern Recognition and Computational Intelligence as a program elective(EC628). Students pursuing their undergraduate and postgraduate courses and doctoral thesis have shown avid interest in the course. The pie charts give the distribution of students strength opted the course from various department since 2016 to 2019. The individual responses of the students about the course on pattern recognition has turned up to be positive.

Snapshots of the students
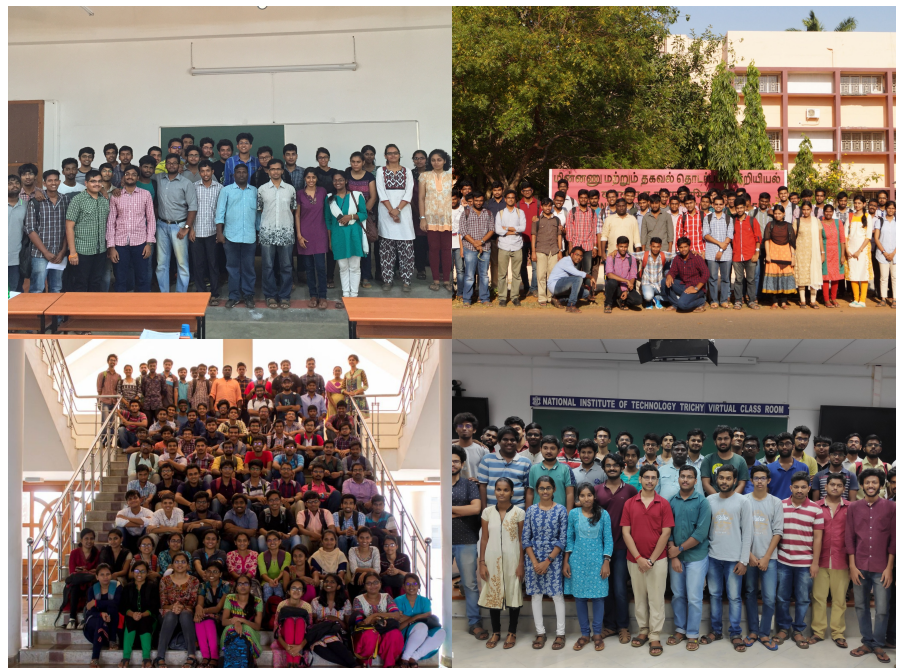
Coming up Global elective:"Pattern Recognition Course" since 2016 (UG-ECOE15/ECPE22)

Pattern Recognition is offered as a Global elective for B.Tech. in coming semester by Dr. E.S.Gopi, Associate Professor, Dept. of ECE.
- Pre-requisite: Nil.
- The knowledge of Probability, Random process and Linear algebra will be the added advantage.
- **Tentative evaluation scheme(weightage)-Under flexible curriculum structure.**

- **Cycle test 1 (Online) -20%**
- **Cycle test 2 (Online) -20%**
- **Matlab/Python based mini project-20%**
- **Audio slide preparation-10%**
- **End semester online exam-30%**

Expression of interest through the link: link for PR

Link to the book: Pattern Recognition and Computational Intelligence Techniques Using Matlab

Link to the video lectures: Video lectures on Pattern Recognition

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The topics covered in this course are listed below

- Dimensionality reduction techniques: PCA, LDA, KLDA, ICA
- Linear Classifier techniques:Nearest Mean, Nearest Neighbour, Perceptron, SVM
- Regression techniques: Linear regression, Regularization, Kernel Trick, Bayes Regression
- Probabilistic supervised classifier and unsupervised clustering: Logistic Regression, GMM, HMM, K-means
- Computational intelligence: PSO, ANT Colony technique, SEOA, SELA, Genetic algorithm, Artificial Neural Network: BPNN, CNN, GAN, Autoencoder Network, RNN, LSTM

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Quotes

"Real education enhances the dignity of a human being and increases his or her self-respect. If only the real sense of education could be realized by each individual and carried forward in every field of human activity, the world will be so much a better place to live in" — 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 NITT invites articles and innovative ideas from readers for the Reader's Space column. We expect feedback and comments to monthly newsletter COMPSIG NITT . Readers can share their views in our facebook page, COMPSIG-NITT. Those who are interested can be a part of the facebook group.

Follow us on Research gate: COMPSIG NITT

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