

## In This Issue. . .

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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.

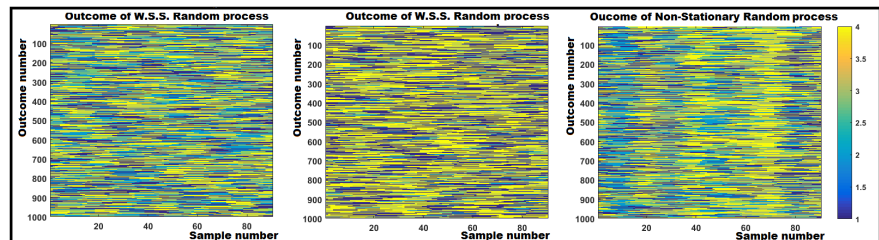
Issue 2-12: December 2016

### Team members

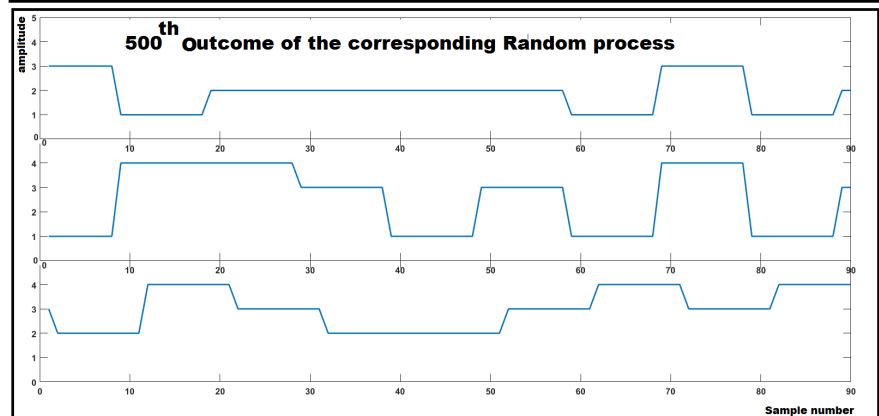
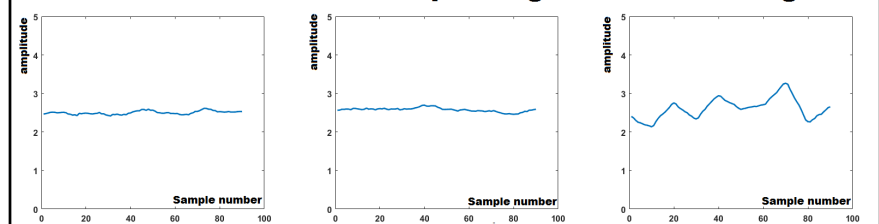
1. Dr. E.S.Gopi, Co-ordinator
2. G. Jaya Brindha, Ph.D. Scholar.
3. Neema.M, Ph.D. Scholar.
4. Rajasekharreddy Poreddy, Ph.D Scholar.
5. Florintina.C, M.Tech, Communication systems.
6. Ankur Satpute, M.Tech, Communication systems.

## Illustration of the received discrete sequence as the Wide Sense Stationary Random process

The figure illustrates that the received discrete sequence represented as  $\sum_k A_k p(t - kT - \theta)$ , (where  $A_k$  is the discrete random process and  $\theta$  is the random variable that is uniformly distributed between 0 to  $T$  and  $p(t)$  is the pulse used to transmit discrete sequence) is the wide sense stationary random process. Simulation is performed with four level pulse transmission.



### Estimation of the corresponding Ensemble average

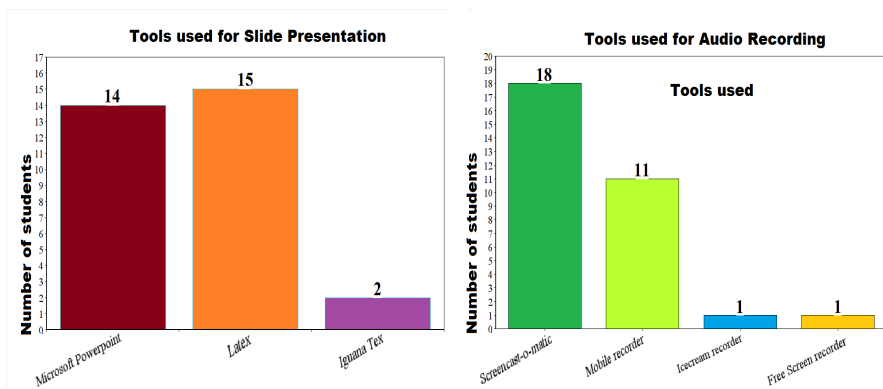


## On-going research in Pattern Recognition and Computational Intelligence laboratory

- Optimizing the Order of Cascaded SVM Classifier for Sunflower Seed Classification.
- Developing the methodology to Visualize the data collected from newspapers for knowledge discovery.
- Improving the classifier's result using Randomized decision rule.
- Construction of a linear discrete system in kernel space as a supervised classifier.
- Identification of crops and weeds from the field images using water segmentation followed by SVM.

## Case studies for Audio slide preparation in Linear Algebra and Stochastic Processes

Students of M.Tech, first semester, Communication Systems (2016-18 batch) were asked to prepare audio slides on case studies allotted to them. Topics were chosen from the applications of Probability, Random processes and Linear algebra in Telecommunication engineering. Evaluation strategy was based on aptness of the content, quality of slides, quality of audio and depth of the technical content. In order to ensure the fairness of evaluation, peer opinion on each audio slide was also collected from randomly chosen five other students in addition to faculty's evaluation. Students were encouraged to use different tools for audio slide preparation. Their feedback on the experience gained while preparing the audio slides and how the audio slides might benefit their juniors are summarized below.



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### Student's feedback

- On experience gained while preparing audio slides
  - It was a good experience
  - Learned how to prepare audio slides
  - Learned how to give offline seminars
  - It was nice exploring and learning new tools
  - Learned how to operate screencast-o-matic tool
  - Learned Bayes detection concept, a bit more functions in MATLAB and Latex software
  - Learned 2 new things: how to use latex and how to prepare audio slides. Apart from these, got in-depth idea of the subject
- On benefit of audio slides to their juniors
  - The concepts are explained from a basic level such that any student can understand step by step and apply accordingly
  - They (Juniors) can easily understand the topic and also by seeing this, they may start to learn Latex tool
  - Juniors will be benefited from this because each topic has been prepared along with audio explanation instead of just slides
  - They (Juniors) can rewind the content and contact the senior in person for doubt clarifications
  - It saves time, as they (Juniors) just need to review the concepts rather than study from the beginning
  - Rather than searching in internet for content they (Juniors) can refer audio slide

Link to the audio slides: <http://silver.nitt.edu/~esgopi/Audioslides/>

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### Quotes

*"Failure will never overtake me if my determination to succeed is strong enough"* — Dr. A.P.J.Abdul Kalam

## Coming up Global elective: PATTERN RECOGNITION (EC 009)

- Summarize the various techniques involved in pattern recognition.
- Identify the suitable pattern recognition techniques for the particular applications.
- Categorize the various pattern recognition techniques into supervised and unsupervised.
- Summarize the mixture models based pattern recognition techniques.
- Summarize the artificial intelligence based pattern recognition techniques.

Tentative evaluation scheme (Weightage) - Under flexible curriculum structure.

- Cycle test 1 - 15%
- Cycle test 2 - 15%
- Matlab simulation experiment - 40%
- End semester exam - 30%

Expression of interest through the link: [https://google/forms/Pattern recognition](https://google/forms/Pattern%20recognition)

Link to the summary of assignments on Pattern Recognition: COMPSIG NITT Newsletter, April 2016

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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. [Back to Contents](#)

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