

In This Issue...

- **Illustration:** Projection Slice Theorem and its Applications
- **Randomized Decision rule:** A time line that depicts the evolution of Randomized decision rule.
- **On-going research work:** Current research work in Pattern Recognition and Computational Intelligence Laboratory.

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.

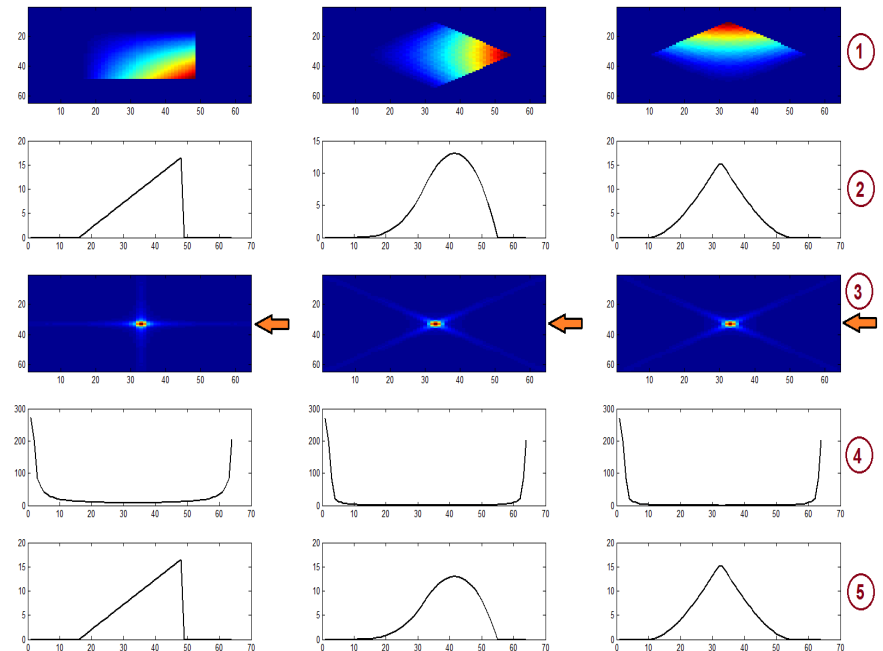
We expect the feedback, comments and articles from you all.

Issue 3-2: February 2017

Team members

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Illustration



- 1 Image
- 2 Summation of column pixels
- 3 2D DFT (mag response)
- 4 1D- DFT points corresponding to the middle row of 3
- 5 1D-IDFT of 4

It is noted the images in the second and third column are obtained by rotating the image in the first column by 45° and 135° respectively.

It is also seen that the corresponding 2D-magnitude spectrum is also rotated by the corresponding angles.

Row 2 and Row 5 are identical and this demonstrates the Projection-slice theorem

Applications of Projection Slice Theorem :

The Projection-Slice Theorem has found a range of applications in remote sensing, non-destructive testing, 3-D imaging of humans (CAT scan) and in the analysis of medical CT scans where a "projection" is an x-ray image of an internal organ. Spotlight-Mode Synthetic Aperture Radar, uses the Projection Slice Theorem in a way quite similar to CAT scan technology, except the way radar projections are generated by the image is slightly different from the way CAT scans use X-rays.

Back to Contents

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Timeline of Randomized Decision Rule



Links to the corresponding articles: [1](#) [2](#) [3](#) [4](#) [5](#) [6](#) [7](#) [8](#) [9](#) [10](#) [11](#) [12](#) [13](#) [14](#) [15](#) [16](#)

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[Back to Contents](#)

Quotes

"If four things are followed - having a great aim, acquiring knowledge, hard work, and perseverance - then anything can be achieved." — Dr. A.P.J. Abdul Kalam

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On-going Research

- Construction a Sunflower plant database for classification purposes.
- Developing the methodology to visualize the data collected from newspapers for knowledge discovery.
- Improving the classifier's result using randomized decision rule.
- Music composition inspired by sea waves.
- Breast cancer detection and diagnosis using machine learning.

[Back to Contents](#)

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, "[COMP-SIGNITT](#)". Those who are interested can be a part of the facebook group.

[Back to Contents](#)

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