

Guest Lecture Report on

“Genomic Signal Processing and Artificial Neural Networks for DNA Sequence Analysis”

By

Dr. Swarna Bai Arniker, Scientist ‘F’, RCI, DRDO, Hyderabad

Under IETE, ISF-NNRG Professional chapter

The guest lecture was conducted by the department of E.C.E on 22nd December, 2017. It was organized under the professional chapter of IETE.

As part of the activity of Innovation the department of ECE organized a guest lecture by **Dr. Swarna Bai Arniker on 22nd December 2017** at Conference Hall. All the III & IV Year students of ECE attended the lecture. Ms. Swarna Bai Arniker addressed Genomic signal processing (GSP) methods which convert DNA data to numerical values have recently been proposed, which would offer the opportunity of employing existing digital signal processing methods for genomic data. One of the most used methods for exploring data is cluster analysis which refers to the unsupervised classification of patterns in data. In this lecture, she addresses a novel approach for performing cluster analysis of DNA sequences that is based on the use of GSP methods and the K-means algorithm. She also proposed a visualization method that facilitates the easy inspection and analysis of the results and possible hidden behaviors. She also showed the results support the feasibility of employing the proposed method to find and easily visualize interesting features of sets of DNA data.

In this Lecture, she stressed an approach for performing cluster analysis of DNA sequences that is based on the use of GSP methods and the K-means algorithm. She also explained a visualization method that allows us to easily inspect and analyze the results. She also showed the results indicate the feasibility of employing the proposed method to find and easily visualize interesting features of sets of DNA data.

In addition, during the project work, the students learn how to cooperate with others who have different skill sets than their own. Ms. Swarna Bai Arniker suggested that at the end of every semester, the students should be encouraged to do a mini project work based on the laboratory experiments, so that they could achieve something really good when they come to the final semester. She advised the students to learn relevant theory before conducting an experiment in the lab, so that he/she can appreciate the need for doing each experiment. She also advised the students to ask and know from the faculty, the relevance of doing each experiment in the lab.

Number of students participated were 102 (III & IV year B. Tech E.C.E).

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