SREE VIDYANIKETHAN ENGINEERING COLLEGE

(AUTONOMOUS)

Sree Sainath Nagar, Tirupati - 517102

DEPARTMENT OF COMPUTER SCIENCE AND SYSTEMS ENGINEERING

A Two Day National Workshop on

"Recent Advances in Bioinformatics and Medical Image Analysis"

The Department of Computer Science and Systems Engineering organized Two Day National Workshop on **"Recent Advances in Bioinformatics and Medical Image Analysis"** sponsored by DST-SERB on 18th & 19th November, 2016. Dr. DVS Bhagavanulu, Director, Dr. I Sudarshan Kumar, Chief Operating Officer, Dr. K Ramani, Prof. and Head of the Dept. IT and Dr. B Narendra Kumar Rao, Prof. and Head of the Dept. CSSE were present doing the inauguration.

Dr. D. V. S. Bhagavanulu, *Director, during inauguration*

Dr. I. Sudarshan Kumar, *COO, during inauguration*

Dr. B. Narendra Kumar Rao, *HOD, CSSE, during inauguration*

Dr. K. Ramani, *HOD, IT, during inauguration*

Dr. DVS Bhagavanulu addressed the gathering and mentioned that the image processing techniques are also useful in Civil Engineering applications. Dr.I Sudarshan Kumar expounded that there are many research opportunities with the intersection of various disciplines and also discussed the necessity of identifying new drugs / computational chemistry. **Dr. B. Narendra Kumar Rao** highlighted various applications in Bioinformatics and Medical Image Analysis.

Prof. K Ramani, **Prof. Jayanthi Sivaswamy**, **Prof S Jyothi**, **Dr. P Sateesh**, **Dr. G Ramesh Kumar** and **Dr. M Naresh Babu** are the resource persons for this workshop. Faculty from different colleges gained knowledge on Image Processing, Medical Image Analysis and Deep Learning, Research opportunities and challenges in transdisciplinary area, Big Data and Next Generation Sequencing (NGS) and also how to Identify Single Drug Multiple Targets for Diabetes Mellitus.

During the first session, **Prof K Ramani**, Head of the Dept. of IT, SVEC**,** enlightened audience with fundamentals of image processing and explained different applications of digital image processing. She also explained various types of noise in the images and various types of filters.

Dr. K. Ramani, delivering a lecture on image processing to the members of faculty

Dr.K.Ramani and faculty of CSSE, presenting a momento

Prof. Jayanthi Sivaswamy *discussing on Medical Image Analysis*

Prof. Jayanthi Sivaswamy delivering an interactive lecture to the faculty

In the next two sessions, **Prof Jayanthi Sivaswamy**, IIIT Hyderabad**,** explained about Medical Image Analysis with its Applications and Challenges in acquisition and processing.

On the last session of the first day, **Prof. S Jyothi**, Sri Padmavathi Mahila Viswavidyalayam, Tirupati shared her knowledge on Deep Learning : Medical Image Analysis and also explained how Neural Networks and Machine Learning is applied for medical image analysis.

Prof. S Jyothi discussing on Deep Learning in Medical Image Analysis

On the second day of the workshop **Dr. P Sateesh**, Professor, Maharaj Vijayaram Gajapathi Raj College of Engineering, Vizianagaram, explained on basics of informatics and various opportunities in Bioinformatics and explained basics of Bioinformatics.

Dr. P Sateesh explaining research opportunities and challenges in transdisciplinary areas

Faculty from various institutes listening to the lecture of Dr. P. Sateesh

Later **Dr. G Ramesh Kumar**, AU-KBC Research Centre, Chennai enlightened various biological databases and explained how Big Data analytics can be applied to NGS data and also mentioned about cloud for Bioinformatics applications.

Dr. G Ramesh Kumar discussing about NGS - Big Data

During the last session of the workshop, Dr. M Naresh Babu, Associate Professor, CSSE Dept., Sree Vidyanikethan Engineering College, Tirupati dealt how network centralities can be applied to Biological Networks to identify most influential proteins.

Dr.M. Naresh Babu delivering a lecture to the faculty

The outcomes of the workshop are listed below:

1. Total number of faculty members and Research Scholars attended are 80.

2. Faculty and students were enlightened with latest innovations in the foundations, theories, models and applications for multi disciplinary research, encompassing Molecular Biology, Structural Biology, Structural Bioinformatics, Computer Aided Drug Design and Medical Image Analysis.

3. Integrate multi disciplinary areas for new innovational research initiations in the field of Bioinformatics and Medical Image Analysis.

4. Faculty and Students understood various biological databases that help how Big Data analytics can be applied to NGS data.