PSG Institute of Technology and Applied Research

Department of Computer Science and Engineering

FoDAA WORKSHOP REPORT

24/02/2016
Coimbatore

A Two-Day Workshop on the "**FUNDAMENTALS OF DATA ANALYSIS, ANALYTICS** " for young Teacher-Researchers, Research Scholars and PG Students on **12th and 13th February 2016** was organized jointly by **PSG Institute of Technology and Applied Research, Coimbatore** and **Sree Saraswathi Thyagaraja College, Pollachi** with the professional support of **IEEE Computer Society (Madras Chapter)** and **Computer Society of India (Coimbatore Chapter).**The resource persons were **Prof.L.S.Ganesh,** Head Mgt, IIT Madras, **Prof.Nandan Sudarsanam** IIT Madras , **Mr.C.Kumaravel, Mr.Gauri Shanker Ram**, Latentview Analytics and **Dr.Gopalakrishnan ,**CTS.

Left to Right bottom row (Dr.L.S.Ganesh, Mr.C.Kumaravel, Mr.Gauri Shanker Ram, Dr.P.V.Mohanram, Mrs.S.Rajeswari, Dr.Hamsapriya)
Left to Right top row (Dr.A.Muthukumar, Mr.S.Thivaharan, Ms.Viraja Ravi, Ms.S.Hemkiran, Ms.M.Sowparnika, Ms.V.Kavitha)

On the first day of the workshop, Dr.L.S.Ganesh introduced the following concepts to the participants with interesting real life examples.

- **Data**- Different definitions and perspectives – Numerical, Semantic, and Sensory.
- **Measurement** of data .
- Explanations of **DATA = PATTERN + NOISE**.
- **Data Collection**: Populations, Samples And Sampling.
- **Decision making** - The primary purpose of Data Analysis and Analytics.
- Visual Representations of Data.
- Unitary and Integrated Summary Measures for Numerical Characterization of Data.
- Dealing with **Uncertainty and Risk**: The science and art of Probability.
- **Types and Laws of Probability**.

Mr.C.Kumaravel, Mr.Gauri Shanker Ram from **Latent view Analytics** shared their industry experiences on Big Data Analytics. Both of them quoted examples from the solutions given by Latent view to various customers worldwide. Latent View provides its customers with actionable insights from digital data, which helps create brands, products and services that engage with consumers across all industries.

DAY – 2

On the second day **Dr.L.S.Ganesh** introduced the following concepts to the participants with interesting real life examples.

- Random Variables – Discrete and Continuous.
- Sampling Distributions – Means, Proportions and Variances.

- Statistical Estimation - Single Sample and Two-Sample Numerical Data Sources.
- Hypothesis Testing – Single Sample and Two-Sample Numerical Data Sources.

Mr.Gopalakrishnan shared his research and industry experiences on "Big Data Analytics" He gave a road map on the list of steps to be followed to solve a business problem based on "Big Data Analysis" in the decreasing order of importance.

1. Objective – The business problem to be solved.
2. Statistical techniques – Univariate/Bivariate/Multivariate analysis.
3. Decision making – Business decisions to be made based on data analysis.
4. Tools used – Hadoop/SAAS Programming etc.

Prof Nandan Sudarsanam shared his research and consultancy experiences on Machine learning and Data science. In Machine learning, he explained supervised and unsupervised learning with interesting real time examples. He also discussed about descriptive and inferential statistics .

Descriptive Statistics (Correlation) -   Descriptive statistics are used to describe the basic features of the data in a study. They provide simple summaries (e.g. mean) about the sample and the measures. Together with simple graphics analysis, they form the basis of virtually every quantitative analysis of data.

Inferential statistics – (The T Test, Covariance, Regression)
With inferential statistics, the underlying process is analysed that extend beyond the immediate data alone.

Mr.C.Kumaravel and Mr.Gowri Shanker Ram shared some of the career opportunities open for data scientists in industry.

The workshop ended with an **Open House Session** , where the resource persons addressed the queries of the participants and discussed research issues in Data Analysis and Analytics.