



# THE FUNDAMENTALS OF DATA ANALYSIS, ANALYTICS AND ALL THAT JAZZ! A Two-Day Workshop

for young Teacher-Researchers, Research Scholars and PG Students

**Friday and Saturday, 12<sup>th</sup> and 13<sup>th</sup> February 2016**

at

**Seminar Hall, CSE Block, PSG iTech**



## Why is such a workshop on fundamentals required now?

### A. It's buzzing hot, it's truly interdisciplinary and it's much more than just numbers:

Data Analytics and all the related terms including Data Mining, Data Warehousing, Data Sciences, Big Data, and so on, have emerged as important subjects of study across a large variety of disciplines spanning the Arts, Business, Commerce, Humanities, Information and Natural Sciences, and Social Sciences.

### B. What you don't know that you don't know could hurt more:

The processes of identification, collection, storage, encoding, retrieval and analysis of data, of all forms, formats, and sizes, and the sharing of the results thereof in all these disciplines are ubiquitous and important to users more than any time before.

### C. We're talking about competition and success, not mere survival:

In our hyper-competitive world, the insights gained from proper and distinctive data analysis can prove to be the most important difference between the finest success and ordinary survival.

### D. You better know the fundamentals before diving into the deep-end:

Across our country, many such Workshops, and other academic events, focused on the deep-end of Data Analytics and on the technologies, continue to be organized. It is hence necessary to orient and guide young teacher-researchers, research scholars and post-graduate students towards the fundamentals of Data Analysis and Analytics, by providing them with a thorough grounding in the subject, and preparing them to dive into the deep-end and emerge confidently and successfully.

Organized jointly by

**PSG Institute of Technology and Applied Research, Coimbatore**  
and  
**Sree Saraswathi Thyagaraja College(Autonomous), Pollachi**

with the professional support of



**The Computer Society of India (Coimbatore chapter)**

and

**IEEE Computer Society (Madras Chapter)**



## The PSG Sons' and Charities

The trust started in 1926, has worked towards building on ideals of Gandhism and in the process educated over 300,000 students mostly from economically weaker sections of the society. As India moves into the global stage with the world's largest youth population and ethics, PSG's ideal of creating high capacity matched with stellar quality would find greater resonance with all those who serve for the common good of the society. PSG Institutions are unique where growth, excellence, equality and ethics are considered together to built future generation and contribute to the nation.

## PSG Institute of Technology and Applied Research (PSG iTech), Coimbatore

PSG iTech, the latest initiative of PSG and Sons' Charities, aims to realize its objective of enhancing youth empowerment through technical education. This institute caters to various engineering disciplines, focusing on learning, industry engagement of students, innovative and inclusive pedagogy, and ethics.

PSG Institute of Technology and Applied Research aims at effective transfer of knowledge, pursuit of truth and moulding the students to become ideal citizens of the country.

## Sree Saraswathi Thyagaraja College (STC), Pollachi (An Autonomous Institution)

STC was established in 1997, the Golden Jubilee year of India's independence, by V.S.V. Vidhyaa Mandir, a charitable trust. The trust, recognizing the need for good quality general and professional higher education in rural areas, set-up the college with a determined vision to provide such education to students from rural areas in and around Pollachi.

The College is affiliated to Bharathiar University and the MBA and MCA programmes have been approved by All India Council for Technical Education (AICTE), New Delhi. Set in sylvan surroundings, the College ensures that students learn well in a conducive academic environment with the state-of-the-art infrastructure facilities. The College has added another feather to its cap by becoming the first Institution in Pollachi Educational District to obtain the coveted ISO 9001:2000 Certification. The institution is NAAC Re-Accredited with 'A' Grade and approved by UGC for 2(f) and 12(B) status.

STC values: Knowledge, Wisdom, Compassion.

## But, can the fundamentals be learned in only two days?

Of course, yes. You are smart, energetic, raring to learn and explore the limits of your powers of concentration, intelligence, visualization and imagination. We know this game inside out. The trick is to enable you and inspire you to learn to learn, and then you win and therefore we win. We won't be surprised if you will want us to continue on Sunday, 14th February, 2016 too, with more of the subject. Hope you will keep everyone at home well informed about your programme, or shall we say adventure into knowledge of the subject?

Just remember the fundamental equation:

$$\mathbf{DATA = PATTERN + NOISE}$$

Once you internalize this, everything else will be very easy and smooth to learn.

## And, who's going to lead the workshop?

The Workshop will be led by Professor L. S. Ganesh of IIT Madras. His colleagues from IIT Madras and professional experts from industry will also share their knowledge and expertise. All the Resource Persons are acknowledged masters in their disciplines and their inputs will be interesting and inspiring.

## Registration Details

Academic Participants	Rs. 1000/-
PG Students and Research Scholars	Rs. 500/-
Industry participants	Rs. 2000/-

**Note:** Payment in the form of DD has to be drawn in favour of **The Dean, PSG CNCE payable at Coimbatore.**

Kindly mention your name and "FoDAA" on the backside of the DD.

### Contact Details

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## What are the fundamentals that will be discussed?

- ✓ What is **Data?** Different definitions and perspectives – Numerical, Semantic, and Sensory.
- ✓ What is **Measurement?** How are different data measured? And, why?
- ✓ Explanations of **DATA = PATTERN + NOISE.**
- ✓ **Data Collection: Populations, Samples And Sampling.**
- ✓ The science and art of describing and characterizing the unknown from the known obtained from the unknowable(?) – 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.**
- ✓ The Types and Laws of **Probability.**
- ✓ Bayes' Theorem and its applications.
- ✓ **Random Variables** – Discrete and Continuous.
- ✓ **Sampling Distributions – of Means, Proportions and Variances.**
- ✓ **Statistical Estimation** – Single Sample and Two-Sample Numerical Data Sources.
- ✓ **Hypothesis Testing** – Single Sample and Two-Sample Numerical Data Sources.
- ✓ **Trends and Correlation.**
- ✓ **Simple and Multiple Regression** – The Linear case.
- ✓ **Analytics** – Methods and Technologies.

## What will happen after the workshop?

The intent is to get you, the participant, interested in and inspired to dive into **Data Analysis and Analytics.** The plan is to follow-up on the Workshop with a one-day **Seminar** on the same theme, but with wider and deeper knowledge inputs from the academic and business contexts. Naturally, the Workshop would have prepared you well to absorb and assimilate the advanced knowledge inputs that will be shared during the Seminar. Catalyzing your academic advancement in this discipline is our primary purpose.

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**Registration Form**

**(Completed form should reach by 4<sup>th</sup> February, 2016)**

Name : .....

Qualification: .....

Work Experience: .....

Designation: .....

Institution: .....

Address: .....

..... Pincode: .....

Mobile: ..... E-mail: .....

Payment details: **DD/ Cash (Please ✓ the appropriate)**

DD No. .... Bank Name with branch .....

Amount Rs. .... Date: .....

Date.....

Signature of the Participant

**Note:** Registration for the programme can be made by sending the duly filled in application form along with **Demand draft** drawn in favor of **"The Dean, PSG CNCE"**, payable at **Coimbatore**, or can be paid as cash before the last date of application.

**Contact Details:**

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