PRE-CONVENTION TUTORIAL ON DATA SCIENCE

Venue: PSG College of Technology
Date: 01.22.2017
SESSION 1

INTRODUCTION TO DATA SCIENCE (Speaker: Karthik Ramasubramanian):


CASE STUDY ON BMI CALCULATION (Speaker: Abishek Singh)

Challenges in insurance – Process of getting life insurance – Prediction of BMI.

STATISTICS

Data descriptive: Structured, Semi Structured, Quasi structured, Unstructured data.

Machine Learning (ML): ML is an algorithm that can learn this relationship without relying on any rule-bases programming. ML will emphasis on how the final predictions will look like if similar data is supplied in future.

Statistical Learning: Statistical modeling will estimate the relationship based on formal quantification from statistical inferences. The process of statistical inference quantifies the process by which data is generated.

SESSION 2- (Speaker: Abishek Singh)

Machine Learning Algorithm – K-means, Decision Tree & Neutral Network.
Visualization – GGPLOTS in R – Boxplot, Histogram, Scatterplot, Sankey Plot, Cohort Charts, Bubble Chart. GGviz – Motion Charts.

Ensembles: Bias vs Variance trade off - Bagging & Booting.

**SESSION 3- (Speaker: Karthik Ramasubramanian):**

Big Data – Ecosystem –

Graph Databases - Graph databases support a very flexible and fine-grained data Model. RDBMS provides results, Graph Databases provides answers.

**SESSION 4 - (Speaker: Abishek Singh)**

```
BMI = \begin{cases} 
\frac{weight(\text{lb})}{height(\text{in})^2} & \text{if height(\text{in}) > 70} \\
\frac{weight(\text{kg})}{height(\text{cm})^2} & \text{otherwise} 
\end{cases}
```

BMI Calculation -

Image Processing – Face Detection – Facial key Points detection.

**Use case:** Predict Emotion, Recognition – verification.


**Future of Data Science:** Deep Learning – Internet of Things – Online Machine Learning (Mobile Devices & Real –Time Performance).

**Talent Graph:** Technology Stack - Neo4j, Titan, Python, Cloud APIs & MEAN technology stack

Machine Learning Probabilistic Graph Models, Regression Analysis, Natural Language Processing(NLP).