



3GIRPS
INSTITUTE OF RESEARCH & POLICY STUDIES
BUILD INDIA TO SERVE THE WORLD

**3G INSTITUTE OF RESEARCH AND POLICY STUDIES
PRESENTS**

**90+ HOURS
DATA SCIENCE**

Venue: IIT Madras Research Park
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DATA SCIENCE PROGRAM

1.1. Python

- 1.1.1. Overview of python
- 1.1.2. Basics of python
- 1.1.3. Python datastructure
- 1.1.4. Python libraries for AI & ML
 - 1.1.4.1. Numpy – Statistical Analysis
 - 1.1.4.2. Pandas –
 - 1.1.4.3. Matplotlib – Data visualisation
- 1.1.5. Debugging methodology
- 1.1.6. Hands on sessions
- 1.1.7. Milestone project

1.2. Statistics

- 1.2.1. Probability
- 1.2.2. Basic statistics
- 1.2.3. Terminology in statistics
- 1.2.4. Distributions
- 1.2.5. Statistical theorems
 - 1.2.5.1. Central Limit theorem
 - 1.2.5.2. Baye's theorem
- 1.2.6. Descriptive analysis and descriptive statistics
- 1.2.7. Inferential analysis and Inferential statistics
- 1.2.8. Statistical Significance
- 1.2.9. Hypothesis testing
- 1.2.10. Bias – Variance trade-off



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1.3. Pre-set up:

- 1.3.1. System requirements
- 1.3.2. Installations
- 1.3.3. Environment setup

2.1. Machine Learning

- 2.1.1. Introduction to Machine Learning
- 2.1.2. Analytics and its types
- 2.1.3. Machine Learning and its types
- 2.1.4. Error metrics
 - 2.1.4.1. Resgression
 - 2.1.4.1.1. MSE- Mean square error
 - 2.1.4.1.2. RMSE – Root mean square error
 - 2.1.4.1.3. MAPE – Mean absolute percentage error
 - 2.1.4.2. Classification
 - 2.1.4.2.1. Confusion matrix
 - 2.1.4.2.2. Precision
 - 2.1.4.2.3. Recall
 - 2.1.4.2.4. Specificity
 - 2.1.4.2.5. F1 score

2.2. Supervised Learning

- 2.2.1. Basic concepts
- 2.2.2. Simple Linear regression
- 2.2.3. Multiple Linear regression
- 2.2.4. Logistic regression
- 2.2.5. KNN
- 2.2.6. Naive Bayes Classifier
- 2.2.7. Decision Tree
- 2.2.8. Random Forest
- 2.2.9. SVM-Support Vector Machine
- 2.2.10. Milestone project

3.1. Ensemble Technique

- 3.1.1. Ensemble learning – basics
- 3.1.2. Boosting
- 3.1.3. Stacking
- 3.1.4. Decision Tree
- 3.1.5. Random Forest
- 3.1.6. Milestone project

4.1. Unsupervised learning

- 4.1.1. Basic concepts
- 4.1.2. K-Means
- 4.1.3. K-means ++
- 4.1.4. Hierarchical cluster
- 4.1.5. Principle component Analysis
- 4.1.6. Milestone project

5.1. Decision making methodology

- 5.1.1. Genetic Algorithm
- 5.1.2. Linear programming
- 5.1.3. Monte Carlo simulations
- 5.1.4. Neural networks concepts

6.1. Deep Learning

- 6.1.1. Neural Networks
- 6.1.2. Deep Learning applications
- 6.1.3. Milestone project

7.1. Data Visualization

- 7.1.1. What is data visualization?
- 7.1.2. How to present a data?
- 7.1.3. Tableau
- 7.1.4. Charts
- 7.1.5. Applications

8.1. Career assistance

- 8.1.1. Resume building
- 8.1.2. Internship
- 8.1.3. Interview preparation
- 8.1.4. Complete career guidance

8.2. Capstone Project

8.3. Hackathon

8.4. Scholarship

8.5. Awards and rewards

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Course Offered

- Internship
- Google AI
- Python
- Ethical Hacking
- Machine Learning - Deep Learning Workshop

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