

ElectroCloud Labs

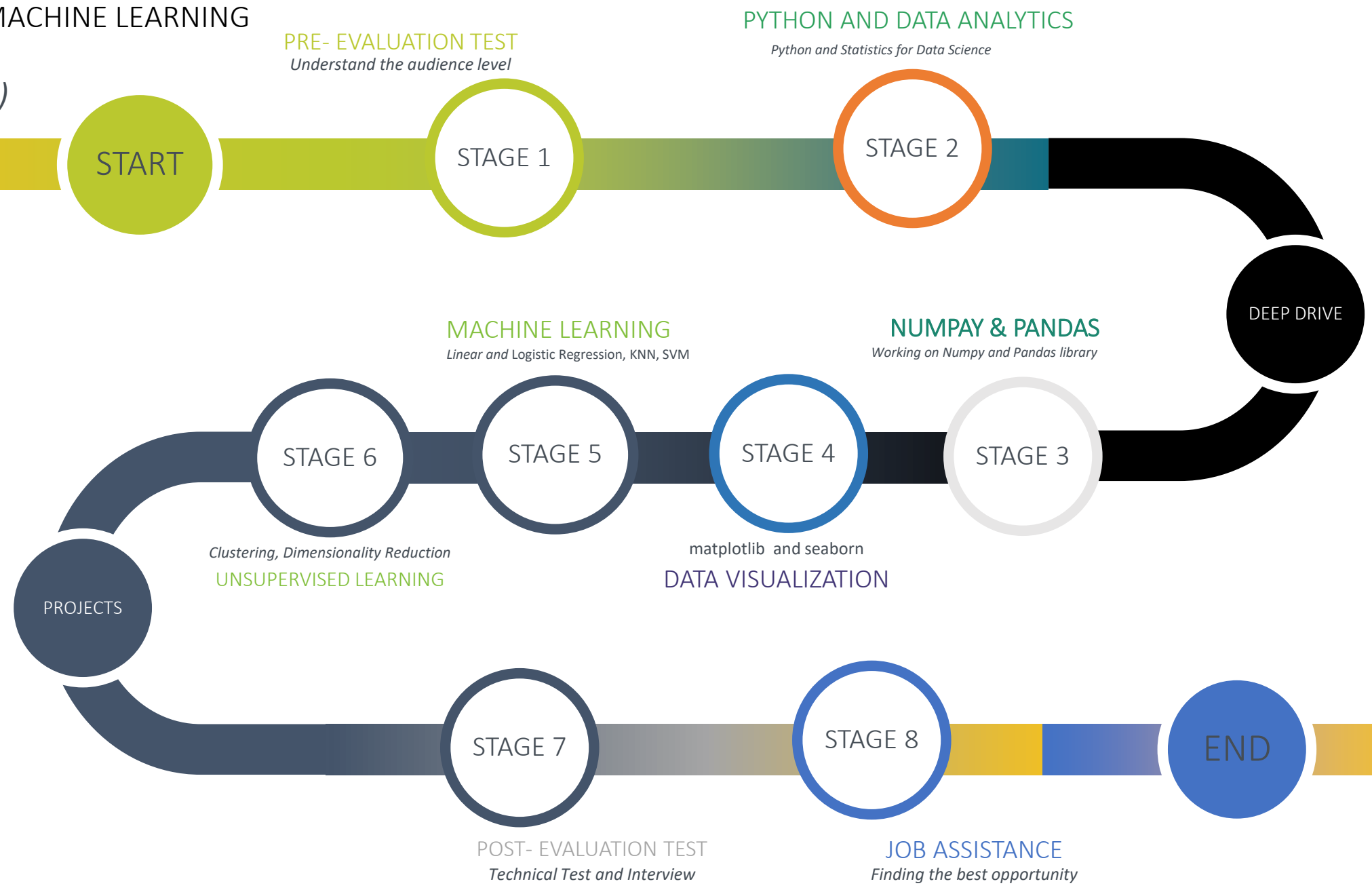
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DATA SCIENCE & MACHINE LEARNING SPECIALIZATION COURSE

Best Course for graduating candidate to start their career | curriculum designed by Industry Experts |
150 Hours (3 Months) of Program | **Hybrid Classes** | World Class Curriculum

DATA SCIENCE AND MACHINE LEARNING COURSE ROADMAP

150 Hours (3 Months)



Program's Key Features

- Course Especially designed for Engineering Students (3rd /4th Year Candidate)
- 150 Hours (3 Months) of Program
- 5+ Case Studies and Assignments
- Masterclass from Industry Expert
- Practical Hands-on Capstone Projects
- Life Time Access to eLearning Materials
- Learn Industrial/Job Oriented Skills
- **Hybrid Classes**
- Career Mentorship Sessions(1:1)
- Career Bootcamp
- 100% Job assistance
- Specialization Certification

Syllabus

Module 1 - Python Programming Basics	Module 2 – Statistics for Data Science	Module 3 – Working with numpy & Pandas
<ul style="list-style-type: none">• Getting started with Python• What is Python?• Installing Anaconda• Variables, and Data Structure• List, tuples and dictionary• Control Structure• Functions in python• Lambda functions• Object Oriented Programming• Modules• Using Packages• Os package• time and datetime• File Handling in Python• Miscellaneous Functions in python• Lab- 1	<ul style="list-style-type: none">• Introduction to Statistics• Population and Sample• Descriptive Statistics v/s Inferential Statistics• Types of variable• Categorical and Continuous Data• Ratio and Interval• Nominal and Ordinal Data• Descriptive Statistics• Measure of Central Tendency – Mean, Mode and Median• Percentile and Quartile• Measure of Spread – IQR, Variance and Standard Deviation• Coefficient of Variation• Measure of Shape - Kurtosis and Skewness• Labs- 2	<p>Working with Numpy</p> <ul style="list-style-type: none">• NumPy Overview• Properties, Purpose, and Types of ndarray• Class and Attributes of ndarray Object• Basic Operations: Concept and Examples• Accessing Array• Elements: Indexing, Slicing, Iteration, Indexing with Boolean Arrays• Shape Manipulation & Broadcasting• Linear Algebra using numpy• Stacking and resizing the array• random numbers using numpy <p>Working with Pandas</p> <ul style="list-style-type: none">• Data Structures• Series, DataFrame & Panel• DataFrame basic properties• Importing excel sheets, csv files, executing sql queries• Importing and exporting json files• Data Selection and Filtering• Selection of columns and rows• Filtering Dataframes• Filtering - AND operation and OR operation• Labs- 3

Syllabus

Module 4 – Working with numpy and Pandas	Module 5 – Data Visualization	Module 6 – Capstone Project
<ul style="list-style-type: none">• Working with Pandas• Data Cleaning• Handling Duplicates• Handling unusual values• handling missing values• Finding unique values• Descriptive Analysis with pandas• Creating new features• Creating new categorical features from continuous variable• combining multiple dataframes• groupby operations• groupby statistical Analysis• Apply method• String Manipulation• Labs - 4	<p>Basic Visualization with matplotlib</p> <ul style="list-style-type: none">• Matplotlib Features• Line Properties• Plot with (x, y)• Controlling Line Patterns and Colors• Set Axis, Labels, and Legend Properties• Alpha and Annotation• Multiple PlotsSubplots <p>Advance visualization using seaborn</p> <ul style="list-style-type: none">• Types of Plots and Seaborn• Boxplots• Distribution Plots• Countplots• Heatmaps• Voilin plots• Swarmplots and pointplots• Labs-5	<p>Project</p> <ul style="list-style-type: none">• Data Science Standard Project• Data Science Project Life cycle• Project Topic• Data Capturing• Data Cleaning• Data Analytics• Working on tools• Data Visualization tools• Project Report Completion• Labs- 6

Syllabus

Module 7 - Linear Regression	Module 8 - Logistic Regression	Module 9 – KNN & Decision Tree
<ul style="list-style-type: none">• The conceptual idea of linear regression• Predictive Equation• Cost function formation• Gradient Descent Algorithm• OLS approach for Linear Regression• Multivariate Regression Model• Correlation Analysis – Analyzing the dependence of variables• Apply Data Transformations• Overfitting• L1 & L2 Regularization• Identify Multicollinearity in Data Treatment on Data• Identify Heteroscedasticity Modelling of Data• Variable Significance Identification• Model Significance Test• R2, MAPE, RMSE• Project: Predictive Analysis using Linear Regression• Labs- 7	<ul style="list-style-type: none">• Classification Problem Analysis• Variable and Model Significance• Sigmoid Function• Cost Function Formation• Mathematical Modelling• Model Parameter Significance Evaluation• implementing logistic regression using sklearn• Performance analysis for classification problem• Confusion Matrix Analysis• Accuracy, recall, precision and F1 Score• Specificity and Sensitivity• Drawing the ROC Curve• AUC for ROC• Classification Report Analysis• Estimating the Classification Model• Project: Predictive Analysis using Logistic Regression• Lab: 8	<ul style="list-style-type: none">• K Nearest Neighbour• Understanding the KNN• Distance metrics• KNN for Regression & classification• implementing KNN using Python• Case Study on KNN• handling overfitting and underfitting with KNN• Decision Tree• Forming Decision Tree• Components of Decision Tree• Mathematics of Decision Tree• Entropy Approach• Gini Entropy Approach• Variance – Decision Tree for Regression• Decision Tree Evaluation• Overfitting of Decision Tree• Handling overfitting using hyperparameters• Hyperparameters tuning using gridsearch• Visualizing Decision Tree using graphviz• Lab: 9

Syllabus

Module 10 – SVM & Ensemble Learning	Module 11 – Unsupervised Learning	Module 12 – Dimensionality Reduction - PCA
<p>Support Vector Machines</p> <ul style="list-style-type: none">• Concept and Working Principle• Mathematical Modelling• Optimization Function Formation• Slack Variable• The Kernel Method and Nonlinear Hyperplanes• Use Cases• Programming SVM using Python• Project - Character recognition using SVM• Labs- 10	<p>Clustering</p> <ul style="list-style-type: none">• Application of clustering• Hierarchical Clustering• K Means Clustering• Use Cases for K Means Clustering• Programming for K Means using Python• Customer segmentation using KMeans• Cluster Size Optimization vs Definition Optimization• Projects & Case Studies• Labs- 11	<ul style="list-style-type: none">• Dimensionality Reduction, Data Compression• Curse of dimensionality• Multicollinearity• Factor Analysis• Concept and Mathematical modelling• Use Cases• Programming using Python

Syllabus

Module 13: Real-world Applications and Case Studies	Module 14: Certification Preparation	
<ul style="list-style-type: none">• Cloud Migration Strategies and Best Practices• Building Scalable and Resilient Architectures• Case Studies: Successful Implementations	<ul style="list-style-type: none">• Overview of Certifications• Tips and Strategies for Exam Preparation• Practice Questions and Mock Exams	END OF PROGRAM

Career Support

Career & Resume Consolation

- Resume Review and Enhancement
- Customization for Job Applications
- Formatting and Design
- Showcasing Achievements
- LinkedIn Profile Optimization
- Networking and Application

Interview Preparation and Mock Interview

- Understand Your Resume
- Research the Company
- Technical Skills Review
- Practice Answering Common Questions
- Dress and Grooming
- Set Up the Mock Interview

Job assistance

- Career Assessment
- Job Search Strategies
- Online Presence
- Application Process
- Interview Preparation
- Professional Guidance
- Flexibility and Open-Mindedness

Data Science industries -

Now days all IT companies have adopted Cloud Computing/infrastructure, some of top companies listed bellow-



Persistent



Flipkart



ramco



Many More.....

How can you conduct this program at your Campus (i.e. University/College)

1. Call us 8341957746 to book an meeting with our manager
2. Get the all required details
3. Sign the NDA/MoU with us.

Frequently Asked Questions (FAQ'S)

- Who is eligible for this program?- Any students from B. Tech/ B.E / M. Tech (3rd & 4th Year)
- What is the fee for Program- **INR 15,000/-** each attendee we expect minimum 40 registration from College/University Site, if registration of candidate increased than we are open to discuss.
- Duration: **150 Hours (3 Months)**
- How many online and offline session: 60% online and 40% offline
- Will students get any certification- Certification where our team will help you to get specialization Certificate
- Shall I get the access to the recoding – Yes candidates will get the access to digital classroom