

Demo Class: Machine Learning Using Python

By:-
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Coding Instructor at Airlearn





About the Instructor

Hey there,

I am SHIVANGI PANDEY, a third year undergraduate at SRMU , Lucknow. Pursuing opportunities which will help me to grow and build professionally with Computer Science majors.

I'm an Incoming Data Scientist at Amazon.To make a way where i apply my skills and contribute to the growth of the company.

Dedicated and passionate in whatever I choose to do and self motivated , Strong interpersonal and communication skills

I'm a very passionate for teaching, I'm the Coding Instructor at Airlearn, I've taught around 60+ students.

I will be your mentor for the Machine Learning Using Python Course. Curriculum in the following slides-



About the Course

In this course, I will be delivering all possible levels of Machine Learning Using Python lessons ,I can make hard concepts easy to understand and make programming fun and master them with ease.

I'll teach you how to program with Python, how to create amazing data visualizations, how to use Numpy, Pandas, Seaborn , Scikit- Learn and more and to use powerful Machine Learning algorithms!

I will also discuss Machine learning interview question, Algorithm specific questions, basic ML concepts.

My major objective will be to develop your problem solving skills, and learn how to snag the most in demand role in the technical field today,

WE BELIEVE IN OUTCOMES NOT ~~PROMISES~~.

Are you ready to start your path to becoming a Data Scientist!

Let's dive in to the world of MACHINE LEARNING USING PYTHON



Phase 1: Introduction to Machine Learning

Accomplishment 1.1

INTRODUCTION OF MACHINE LEARNING

- What is machine learning
- Difference between machine learning, deep learning and data science
- Application of machine learning
- Types of machine learning
- Difference between Supervised, Unsupervised, Reinforcement learning
- Life cycle
- Bias- variance trade-off
- Overfitting, Underfitting
- Complete Roadmap

Accomplishment 1.2

- Features and Labels in ML
- Data Collection
- Data Cleaning
- Data Preprocessing
- Model Building
- Model Deployment



Phase 2: Installation And Python Libraries

Accomplishment 2.1

- Installation of Anaconda Navigator
- - Spyder IDE
- - Jupyter notebook
- PYTHON LIBRARIES-
 - NUMPY - PANDAS - MATPLOTLIB
 - SEABORN - SCIKIT-LEARN

Accomplishment 2.2

- Hands-on-Python
- Basic syntax and structure of data, Awareness about required libraries
- Learning to manage data in pandas
- Understanding the various graphics in Matplotlib
- Understanding- Class results
- Understanding- Scaling of data
- Understanding- Splitting dataManaging Incomplete Data



Phase 3: Algorithms

Accomplishment 3.1

ALGORITHMS

1. Linear Regression
2. Logistic Regression
3. Support Vector Machine(SVM)
4. Decision Tree
5. Random Forest
6. K - Nearest Neighbour (KNN)
7. K Means Clustering
8. Hierarchical Clustering



Phase 4: Supervised Learning

Accomplishment 4.1

- Regression

- Linear Regression

Model representation

Cost function

- Optimization

Gradient Descent

Batch and mini Batch

Stochastic

- Confusion Matrix
- Bias variance Trade off
- Multiple Linear Regression
- Polynomial Regression
- Overfitting, Underfitting
- Support Vector Regression(SVR)
- Decision Tree
- Random Forest

Accomplishment 4.2

- Classification

- Logistic Regression
- K-NN
- Support Vector Machine(SVM)
 - Kernel SVM
- Naive bayes
- Decision Tree Classification
- Random Forest Classification



Phase 5: Unsupervised Learning And Reinforcement Learning

Accomplishment 5.1

Unsupervised Learning-

- Clustering-
 - K- Means Clustering
 - Hierarchical Clustering
- Dimensionality Reduction-
 - Principal Component Analysis(PCA)
 - Linear Discriminant Analysis(LDA)
 - Kernel PCA

Accomplishment 5.2

- Regularization
 - Ridge
 - Lasso
- Model Selection
 - K-Fold Cross Validation
 - Grid search
- Ensemble Learning
 - Bagging , Boosting
 - XGBoost

Reinforcement Learning-

- Upper Confidence Bound(UCB)
- Thomson Sampling



Phase 6: Mathematics for Machine Learning

Accomplishment 6.1

- Linear Algebra
- Application of Linear Algebra in ML
- Multivariate Calculus
- Application of Multivariate Calculus in ML
- Probability
- Application of Probability in ML
- Statistics

Accomplishment 6.2

- CONCEPT OF LEARNING IN ML SYSTEM



Phase 7: Bonus Section

- **ML Projects** –
 1. Loan prediction analysis
 2. Bike sharing demand analysis
 3. Turkiye Student Evaluation



Attention areas

INTERVIEW QUESTIONS

- Basic ML Concepts
- All Algorithm questions
- Application Machine learning questions
- Machine learning using python interview questions

KAGGLE ML COMPETITION

- *Introduction to Kaggle*
- *How to participate in online ML competitions*

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Liked it?

ML is a rewarding career that allows you to solve world's most interesting business problems .

Then WHAT ARE YOU WAITING FOR?

Register to this Course and Get started with your journey through Machine learning using python