Certification Course on Machine Learning for Data Science using Python (May 17th – June 11th, 2021)

Organized by Department of CSE

Coordinators:

Dr. Venkateswara Rao Kagita
Dr. M. Sandhiya
Dr. Balaprakasa Rao Killi

Highlights

- Four weeks course.
- Five days per week.
- Two hours per day.
- Flexible timings: 5 PM to 7 PM.
- World class Instructors.
- Hands-on experience with Python.
- Real-world projects.
- Online certification course.

Contact us @ bsprao@nitw.ac.in, msandhya@nitw.ac.in, venkat.kagita@nitw.ac.in

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In association with Center for Continuing Education (CCE), NIT Warangal
Introduction
What is Data Science, Real-life examples and Applications, Data Scientist roles, Machine Learning vs. Data Science vs. AI, Machine Learning types, Generics of ML approaches.

Python Essentials
Installation, Python Editors & IDE's, Lists, Tuples, Dictionaries, Strings, Data manipulation tools, Importing/exporting data.

Probability and Statistics for Data Science
Basic probability theory, Random variables, Probability distributions, Markov models, Bayesian learning, Applications.

Regression Analysis
Univariate linear regression, Multivariate linear regression, Polynomial Regression, Applications.

Classification
Logistic regression, SVM, Multi-class SVM, Decision trees, K-NN, Applications.

Ensemble Approaches
Bagging, Random Forests, Boosting: Adaboost, Gradient boosting, Applications.

Optimization
Gradient descent, Stochastic gradient descent, Batch gradient descent.

Clustering
Different clustering approaches and applications.

Feature Engineering
Feature Scaling, Feature Selection: Filter methods, Wrapper methods, Embedded methods.

Dimensionality Reduction
Principal component analysis, Linear discriminative analysis, Multiple discriminant analysis, Independent component analysis.

Neural Networks

Reinforcement Learning

Recommendation Systems
Introduction, Types of recommender systems, Content-based, Collaborative filtering: Matrix factorization based approaches, Knowledge-based, and Hybrid techniques, Times series forecasting, other real time examples.

Hands-on to the majority of the topics using Python.

Projects
- House price prediction using regression techniques.
- Customer churn prediction using decision tree & ensemble approaches.
- Color compression using K-means clustering.
- Handwriting digit recognition using convolutional neural network.
- Solving Puzzles/Games using Q-Learning.
- Diabetics prediction using logistic regression.
- Color compression using K-means clustering.

Registration Fee

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Registration link: [https://forms.gle/w1TcNGiX2TDiRjCy7](https://forms.gle/w1TcNGiX2TDiRjCy7)