30 hours online short-term course on Machine Learning with Python: Basics to Advanced

(21st October – 12th November, 2025)

Program Coordinator and Instructor:
Dr. Venkateswara Rao Kagita,
Department of CSE
NIT Warangal

Highlights

- ✓ 20 days workshop.
- ✓ 1.5 hours per day.
- ✓ Flexible timings 7:30- 9.00 PM
- ✓ Hands-on experience with Python.
- ✓ Real-world projects.
- ✓ Online mode.
- ✓ No class on special days.
- ✓ Video recordings will be available
- ✓ E-certificate of participation

Contact us @

venkat.kagita@nitw.ac.in

6281746931

Course Content

- **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**
  Data manipulation tools, NumPy, Pandas, Visualization, Scikit-Learn.
- **Probability Concepts for Machine Learning**
  Basic probability theory, Random variables, Probability distributions, Bayesian theorem.
- **Regression Analysis**
  Univariate linear regression, Multivariate linear regression, Polynomial Regression, Applications.
- **Classification**
  Logistic regression, SVM, Multi-class SVM, Decision trees, Naïve Bayes, 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.
- **Neural Networks**
  Introduction to neural networks, Back propagation algorithm and theory behind, Introduction to deep learning.
- **Reinforcement Learning**
  Markov Decision Process, Planning, Estimation, Control and Applications.
- **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.
- Handwriting digit recognition using neural network.
- Diabetics prediction using logistic regression.
- Color compression using K-means clustering
- Self-Driving Cabs using Q-Learning

Where Technology Meets Innovation

Registration Fee

Category	Amount
Academic	**Rs. 1000/-**
Industry	**Rs. 1500/-**

Account Details

Account Number	**62266262236**
Account Name	**Director Research Account**
Bank Name:	**State Bank of India**
Branch:	**NIT Warangal**
IFSC Code	**SBIN0020149**

Registration link: https://forms.gle/sko83rQZ7ihijxPD9