

MACHINE LEARNING BROCHURE



About Alocodes

Alocodes is an EdTech initiative by Alomonx Technology, created to provide high-quality coding, AI, and cloud training to students, job-seekers, and professionals. We believe that skills matter more than degrees, and our mission is to deliver industry-level training that prepares learners for real-world jobs.

Program Overview

This program of machine learning is designed to build intelligent systems that can learn from data and make decisions without explicit programming.

Unlike traditional data-focused programs, this course emphasizes:

- Model building
- Real-world AI applications
- Automation & intelligent decision systems

Why Choose Our Machine Learning Program?

- Focus on AI system development, not just analysis
- Learn how machines learn patterns & make decisions
- Build production-ready ML models
- Covers deployment + real-world integration

Curriculum Overview

◆ Module 1 : Foundations of Machine Intelligence

- What is Machine Learning vs AI
- Types of learning (Supervised, Unsupervised, Reinforcement)
- Real-world ML use cases
- Libraries: NumPy & Pandas (basic data manipulation)

◆ Module 2 : Learning Algorithms Deep Dive

- Linear & Logistic Regression (intuition + math)
- Decision Trees & Random Forest
- Support Vector Machines
- Bias vs Variance tradeoff

◆ Module 3 : Feature Engineering & Optimization

- Feature selection techniques
- Dimensionality reduction (PCA)
- Hyperparameter tuning
- Model optimization

◆ Module 4: Deep Learning & Neural Networks

- Artificial Neural Networks (ANN)
- Convolutional Neural Networks (CNN)
- Introduction to RNN
- Real-world applications

◆ Module 5: Natural Language Processing

- Text preprocessing
- Word embeddings
- Sentiment analysis
- Chatbot basics

◆ Module 6: Computer Vision

- Image processing basics
- Object detection
- Face recognition concepts

◆ Module 7: Model Deployment & AI Systems

- Model deployment using APIs
- Flask / FastAPI basics
- Integrating ML with mobile/web apps
- Real-world AI pipelines

◆ Module 8: AI Product Development

- Designing ML-based applications
- Scalability & performance
- Industry use cases

Tools, Languages, Platforms



Sample Projects

1. House Price Prediction

- Skills Involved: Regression algorithms (Linear Regression), Data preprocessing, Feature selection, Model evaluation.
- Description: This project involves predicting house prices based on features like location, size, number of bedrooms, and amenities. Students will clean the dataset, train a regression model, and evaluate its performance using metrics like accuracy and error rate.
- Dataset: Ames Housing Dataset or Boston Housing Dataset (Kaggle).

2. Customer Segmentation Using K-Means Clustering

- Skills Involved: Unsupervised learning, feature scaling, clustering.
- Description: Use customer data (such as annual income, spending score, age) to segment customers into different groups. The project will involve preprocessing the data and applying K-means clustering to identify customer segments.
- Dataset: Mall Customer Dataset (Kaggle).

3. Movie Recommendation System

- Skills Involved: Recommendation algorithms, Collaborative filtering, Data analysis, Python libraries (Pandas, NumPy).
- Description: This project focuses on building a recommendation system that suggests movies based on user preferences and behaviour. It demonstrates how platforms like Netflix suggest content.

4. Sentiment Analysis on Twitter Data

- Skills Involved: Natural Language Processing (NLP), text preprocessing, classification.
- Description: Using a dataset of tweets, students can build a sentiment analysis model to classify tweets as positive, negative, or neutral. They'll apply techniques like tokenization, stopword removal, and vectorization (e.g., TF-IDF) and use models like Naive Bayes or SVM.
- Dataset: Twitter Sentiment Analysis Dataset (Kaggle or Twitter API).

5. Fraud Detection with Credit Card Data

- Skills Involved: Classification, imbalanced data handling, evaluation metrics.
- Description: Using a credit card transactions dataset, students can build a model to detect fraudulent transactions. Techniques for handling imbalanced data, such as SMOTE (Synthetic Minority Over-sampling Technique), can be applied.
- Dataset: Credit Card Fraud Detection Dataset (Kaggle).

Career Opportunities

By completing our Data Science Program, you'll be ready to take on key roles in the industry, including:

- Data Scientist
- Machine Learning Engineer
- AI Engineer
- NLP Engineer
- AI product Developer

Hiring Companies:

Our graduates have found opportunities at top companies like:

- Flipkart
- VIOS
- Wipro
- TCS
- Cognizant
- Startups and Fintech Companies

Certificates

This certificate template features the Alocodes logo (Learn. Code. Placed.) and Alomonx logo. The title is "CERTIFICATE OF COURSE COMPLETION". The text reads: "This is to certify that [Recipient Name] has successfully completed the [Course Name] course at Alocodes from [Start Date] to [End Date]. During this period, they demonstrated dedication, consistency, and a strong commitment to learning and skill development." It includes an "Authorized Signatory" field for the Academic Head, ISO 9001:2015 and MSME logos, and a unique certificate ID: AL/26/712358424563.

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your career to the next level?

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Phone: 91029 25171

Email: info@alocodes.in

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