Machine Learning Roadmap with Timeline

Month 1: Foundations

- Learn Python fundamentals
- Understand basic statistics and probability
- Introduction to linear algebra and calculus

Month 2: Data Handling

- Learn NumPy, Pandas
- Data cleaning and preprocessing
- Exploratory Data Analysis (EDA)

Month 3: Machine Learning Basics

- Learn Scikit-learn
- Supervised vs Unsupervised Learning
- Linear Regression, Logistic Regression
- k-NN, Decision Trees, Naive Bayes

Month 4: Model Evaluation & Tuning

- Cross-validation
- Hyperparameter tuning
- Performance metrics (accuracy, precision, recall, F1-score)

Month 5: Advanced Algorithms

- Support Vector Machines (SVM)
- Ensemble methods: Random Forest, Gradient Boosting
- Clustering algorithms: K-Means, DBSCAN

Month 6: Deep Learning

- Introduction to Neural Networks

Machine Learning Roadmap with Timeline

- Learn TensorFlow or PyTorch
- CNNs, RNNs, LSTMs

Month 7: Projects & Practice

- Work on real-world datasets
- Build end-to-end ML pipelines
- Participate in Kaggle competitions

Month 8: Deployment & MLOps

- Model deployment with Flask/FastAPI
- Use Docker for containerization
- Basics of CI/CD and cloud platforms