

# Machine Learning Project Details

Our course includes **3 mini projects** and **4 major projects**, designed to provide hands-on experience in Advanced Machine Learning and Deep Learning. These projects aim to build practical skills by addressing real-world problems. By completing these projects, students will gain in-depth knowledge and prepare for career opportunities in Machine Learning and Deep Learning.

## Data Libraries Mini Projects

### 1. Sales Data Insights

Analyze sales data to uncover trends, patterns, and insights. Use data preprocessing and visualization techniques to identify key business metrics and derive actionable recommendations.

### 2. Employee Data Analysis

Perform exploratory data analysis on employee datasets to evaluate performance trends, turnover rates, and organizational metrics. Develop dashboards to visualize findings effectively.

## Machine Learning Mini Project

### 1. Melbourne Housing Snapshot

Investigate the Melbourne housing market using machine learning models to predict house prices. Utilize features like location, size, and amenities to analyze housing trends.

# Major Projects

## 1. Obesity Challenge

This project focuses on predicting obesity levels using health and lifestyle data. Students will preprocess datasets, engineer relevant features, and apply machine learning models. Evaluate the accuracy of different algorithms and select the most effective model. The project emphasizes data-driven insights for addressing public health challenges. Gain experience in health data analytics and reporting.

## 2. Financial Risk for Loan Approval

Develop a machine learning model to predict loan approval decisions based on customer profiles. The project involves analyzing financial behavior, credit scores, and demographic data. Use classification techniques to assess risk and provide actionable insights for financial institutions. Learn to handle imbalanced datasets and evaluate model performance. Deliver a comprehensive solution to streamline the loan approval process.

## 3. FLM Bank Application

Create a smart application for FLM Bank that leverages machine learning to enhance customer services. Focus on predictive analytics for loan recommendations, customer retention, and personalized offers. Work on data preprocessing, building predictive models, and deploying the solution. Explore real-world banking datasets and optimize the application's performance. This project combines AI with financial technology.

## 4. Bank Statement Aggregator (BSA)

Design a system that processes and categorizes bank statements using natural language processing techniques. Extract and analyze transaction patterns to provide financial summaries. Build an intuitive interface for visualizing spending habits and generating insights. Gain hands-on experience with NLP, data visualization, and financial analytics. Develop a scalable solution applicable to personal finance management.