About Loan Eligibility Prediction

Loan eligibility is defined as a set of criteria bases which a financial institution evaluates to decide the eligibility of customer for a particular loan.

Criteria

Loan Amount, Dependents, Marital Status, Applicant income, Loan amount term, Co-applicant income, Gender, Credit history, Property area.

What is Data Science?

Data Science is a fiend that deals with a large volume of data and uses various tools and algorithms to find unseen patterns and derive meaningful information.

What is Machine Leaning?

Machine Leaning is a branch of study that makes use of algorithms for the computer to learn from the data and improve its accuracy by itself through experience. Learn> Predict> Improve

Types of Machine Learning

1. Supervised Learning, (Labeled Data), Classification Algorithms- [Decision Tree, Random Forest, Naïve Bayes], Regression Algorithms- [Simple linear regression, Polynomial, Multiple linear regression]
2. Unsupervised Learning (Unlabeled Data)
3. Reinforcement Learning (Learns through its experience)

In this project we use **Classification Algorithm- Decision Tree Classification**

Attribute Selection Measures

1. Entropy - randomness in the information being processed.
2. Information gain – measured how well the attribute separates the training data according to their target classification.
3. Gini index
4. Gain Ratio

In this project we also use **Classification Algorithm- Naïve Bayes Classification**

Assumptions made by Naïve Bayes

Each feature makes an:

-independent

-equal Contribution to the outcome

Libraries Used in the Project

Pandas – Powerful, fast, and flexible library for Data Analysis, Manipulation, and filtering.

NumPy – Used to perform mathematical and logical operations on arrays.

Matplotlib – Comprehensive library for creating static, interactive and animated visualizations.

Scikit Learn – Most useful library with efficient tools for machine learning and statistical modeling including a range of supervised and unsupervised learning algorithms.

This loan eligibility prediction project involved exploring and preprocessing a dataset to predict loan approval status. The data underwent normalization, handling missing values, and conversion of categorical variables. Two machine learning algorithms, Decision Tree and Naive Bayes, were employed for prediction, with their accuracies assessed. Finally, the models were applied to a test dataset to predict loan eligibility, showcasing the practical application of the developed models.