CAPSTONE PROJECT

Shopping Intention Prediction using ANN

Final Project

Presented By

PAVITHRAN .R

711721244303
III BTech CSBS
KGISL Institute of Technology

PROJECT TITLE

Apply artificial neural networks to accurately predict clients' shopping intentions when they make purchases online.

AGENDA

1. Proble Statement
2. Project Overview
3. End Users
4. Solution and Value Proposition
5. The Wow Factor in Your Solution
6. Modelling
7. Results

PROBLEM STATEMENT

Problem:Businesses must comprehend and anticipate consumer purchasing intentions in order to maximize marketing efforts and improve customer satisfaction.

Challenge: The complexity of customer behavior may be too complicated for traditional methods to fully capture, which could result in ineffective targeting and engagement.

Objective: Using a variety of parameters, create an Artificial Neural Network (ANN) model that can effectively anticipate a person's intention to shop.

PROJECT OVERVIEW

- Objective: use ANN to forecast consumers' intentions to shop.
- Methodology: Train the model with historical data on online interactions, demographics, and consumer behavior.
- Technique: Use a multi-layer perceptron (MLP) artificial neural network (ANN) for predictive analysis.
- Tools: Python, necessary data visualization packages, and TensorFlow/Keras for ANN implementation.

WHO ARE THE END USERS?

End Users: Retailers, E-commerce platforms, Marketing agencies.

Importance: Helps businesses tailor marketing efforts, personalize recommendations, and optimize inventory management.

Benefits: Enhanced customer engagement, increased conversion rates, and improved ROI on marketing investments.

YOUR SOLUTION AND ITS VALUE PROPOSITION

- Solution: Develop an ANN model capable of accurately predicting consumer shopping intentions.
- Value Proposition:
  - Precision: Leverages advanced machine learning techniques to provide precise predictions.
  - Scalability: Adaptable to varying business sizes and industries.
  - Efficiency: Streamlines marketing efforts by targeting the right audience with tailored campaigns.
  - Competitive Edge: Empowers businesses with insights into consumer behavior, enabling proactive strategies.

THE WOW IN YOUR SOLUTION

- Personalized Recommendations: Recommends products based on individual preferences and past behavior.
- Real-time Insights: Provides instant feedback on changing consumer trends and preferences.
- Interactive Interface: User-friendly interface for businesses to explore and interpret predictions easily.
- Continuous Learning: Adapts and improves over time with new data, ensuring accuracy and relevance.

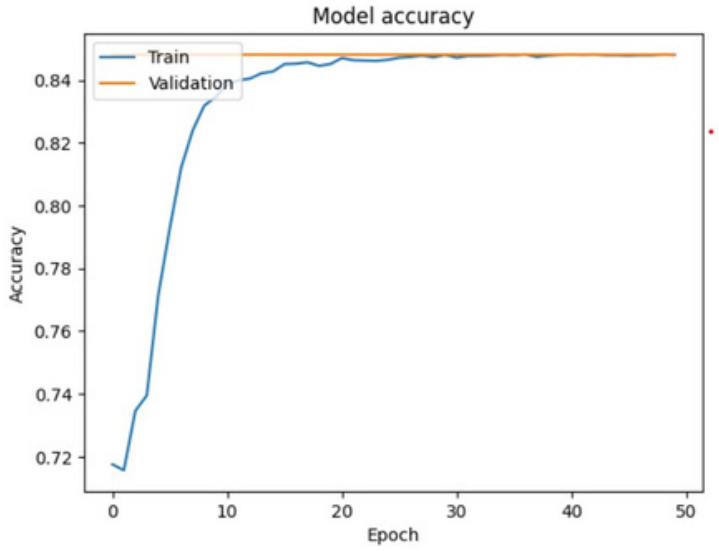
MODELLING

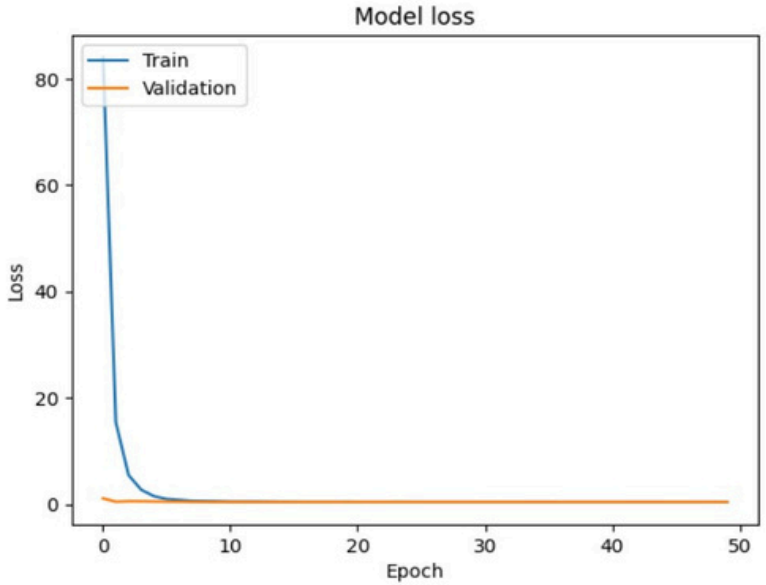
Data Preprocessing: Cleaning, normalization, and feature engineering.

- Model Architecture: Multi-layer perceptron (MLP) with multiple hidden layers.
- Training Process: Splitting data into training and validation sets, optimizing hyperparameters, and iterative training.

•Evaluation Metrics: Accuracy, precision, recall, and F1 score to assess model performance.

RESULTS


Model accuracy
Train
Validation
Accuracy
0.84
0.82
0.80
0.78
0.76
0.74
0.72
0
10
20
30
40
50
Epoch


Model loss
Train
Validation
Loss
80
60
40
20
0
0
10
20
30
40
50
Epoch