Neural Networks and Deep Learning with Business Applications

SP Jain School of Global Management

Assignment L3

Background

You have been provided with a dataset representing various features of customer purchases at a retail store. The dataset includes information such as the age of the customer, their annual income, frequency of purchases, average purchase value, years as a customer, the number of returns, and a customer loyalty score.
A feedforward neural network has been trained to predict the type of review a customer is likely to give based on these features. The reviews are categorized as 'Good', 'Neutral', or 'Bad'. (20 marks)

Dataset Features

- Age (years)
- Annual Income (thousands of dollars)
- Purchase Frequency (number of purchases per year)
- Average Purchase Value (dollars)
- Years as Customer
- Number of Returns
- Customer Loyalty Score (0 to 10)

Predicted Target

- Review (Good, Neutral, Bad)

Task

Data Exploration and Visualization

- Analyze the dataset to understand the distribution and relationship of various features.
- Visualize the data to uncover any interesting trends or patterns.

Model Interpretation

- Given the neural network model for predicting customer reviews, interpret the potential impact of each feature on the predicted review.
- Discuss how different features might influence a customer's review.

Deliverables

- A Jupyter notebook containing your analysis, visualizations, interpretations, and critical discussion.