

**IOT ENABLED GROCERY SHOPPING  
RECOMMENDATION SYSTEM USING MACHINE  
LEARNING TECHNIQUE**



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**A Thesis submitted in the fulfilment of the requirements  
for the award of MS (SE) Degree**

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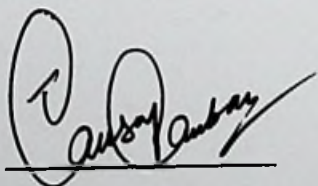
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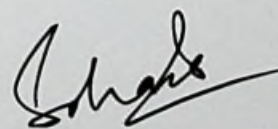
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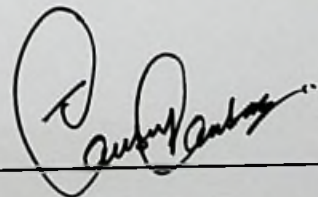
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## Abstract

Recommender System are increasingly become part of the information solution because our data is growing rapidly therefore these Information solutions could be capable works on the existing data pattern and predict some other recommendations to facilitate the user decisions. Grocery recommendation system still looking for personalized recommendations for the customers which will enhance the customer personalized shopping experiences while shopping from a Grocery Mart. The major issue exists in all recommender systems is the Cold start problem. The cold start problem occurs when no data found from past data to process the request. The cold start problem are of two types either Visitor cold start problem when a new customer added into the system as well as when a new product added into the system it is called as Product cold start problem in both case the recommender systems are unable to generate the recommendations.

This thesis gives the implementation of hybrid filtering recommendations approach to generate the recommendations based on personalized grocery shopping experiences during shopping in a Grocery Mart. It also implemented the solution of cold start problem for both cases either visitor cold start or product cold start by fetching the IoT based promotion recommendations for those products. To generate the IoT based recommendations, we have implemented a mobile application, Grocery Picker, which is interacting with the smart IoT based advertisement solution using ESP8266 and display it onto the customer mobile.

This Grocery Picker application uses machine learning components that generate the Recommendations based on the needs of customers. The main contribution of this thesis is to provide the solution of cold start problem by the implementations of IoT based recommendations using the smart advertisement component.

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