Movie Recommendation System: A Hybrid Approach

A Project Report
Submitted in partial fulfillment of
the requirements for the award of the degree of

BACHELOR OF TECHNOLOGY

by

Bandaru Bhavyanath	B180399EC
Chevuru Sai Jaswanth	B180668EC
Eruguri Jeshwanth	B180556EC
Jarapala Mohith Pamar	B181027EC

Under the guidance of

Dr. Vinay Joseph

Dr. Nujoom Sageer Karat

Department of Electronics and Communication Engineering
National Institute of Technology Calicut
Calicut, Kerala, India – 673 601

2021-2022

Acknowledgments

We take this opportunity to express our deepest gratitude to everyone who supported us through this online semester, and helped and motivated us in completing this project.

We sincerely express our whole hearted gratitude to our project guides **Dr. Vinay Joseph** and **Dr. Nujoom Sageer Karat**, for helping and guiding us through this project Without whom, we would not have been able to complete the project successfully.

We would like to thank the Project Co-ordinator **Dr. V. Sakthivel** and the evaluation committee for all the valuable suggestions put forward during the project evaluations.

We would like to acknowledge the Department of Electronics and Communication Engineering, National Institute of Technology, Calicut, for extending its full support during the entirety of the project and helping us through the online and offline semester.

We would also like to thank our beloved family members who supported us and have provided a working environment at our homes, in these testing times.

Declaration

We hereby declare that except where specific reference is made to the work of others, the contents of this project report are original and have not been submitted in whole or in part for consideration for any other degree or qualification in this, or any other university. This project report is our own work and does not contain any outcome of work done in collaboration with others, except as specified in the text and Acknowledgements.

B Bhavyanath (B180399EC)

C Sai Jaswanth (B180668EC)

E Jeshwanth (B180556EC)

J Mohith Pamar (B181027EC)

NIT Calicut
Date: 02/05/2022

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Certificate

This is to certify that the project report entitled **Movie Recommendation System: A Hybrid Approach** submitted by **B Bhavyanath (B180399EC), CH Sai Jaswanth (B180668EC), E Jeshwanth (B180556EC), J Mohith Pamar (B181027EC)** to National Institute of Technology Calicut for the award of the degree of Bachelor of Technology in Electronics and Communication Engineering, is a bonafide record of the project work carried out by them under my supervision and guidance. The content of the project report, in full or parts have not been submitted to any other institute or university for the award of any degree or diploma.

Dr. Vinay Joseph
(Project Guide)
Dept. of ECE, NITC.

Dr. Deepthi P.P.
(Professor and Head of Department)
Dept. of Electronics and Communication Engineering
NIT Calicut

Dr. Nujoom Sageer Karat
(Project Guide)
Dept of ECE, NITC.

Date: 02/05/2022

(Office seal)

Abstract

Natural language processing is crucial in today's progressing world because it helps overcome linguistic ambiguity like speech recognition and text analytics. Natural language processing has made great progress recently using the BERT framework. Recommendation System is another significant area that is very popular and useful for faster-automated decisions. Surveys show we spend more than 100 days of our lives choosing what to watch. A Movie Recommendation System suggests a collection of movies to the users depending on their preferences and similarities. To improve the quality of recommendations, we have developed a hybrid approach by combining collaborative filtering using Matrix Factorization and content based filtering using BERT4Rec which is an extension of the BERT framework for recommendation systems. Several studies indicate that the hybrid approach can provide more accurate recommendations. We have utilized the MovieLens dataset, which is a representative and popular real-world benchmark dataset in recommendation systems. We have evaluated the performance of our novel movie recommendation system