

A DECISION TREE BASED RECOMMENDATION SYSTEM FOR TOURISM

B Suryanarayana Murthy¹, G Satya Phaneswari²

¹Assistant Professor MCA DEPT, Dantuluri Narayana Raju College ,Bhimavaram, Andhrapradesh

Email id: - suryanarayanamurthy.b@gmail.com

²PG Student of MCA, Dantuluri Narayana Raju College, Bhimavaram, Andhrapradesh

Email id: - satyagudapati0000@gmail.com

ABSTRACT

Choosing a tourist destination from the information that is available on the Internet and through Other sources is one of the most complex tasks for tourists when planning travel, both before and during travel. Previous Travel Recommendation Systems (TRSs) have attempted to solve this problem. However, some of the technical aspects such as system accuracy and the practical aspects such as usability and satisfaction have been neglected. To address this issue, it requires a full understanding of the tourists' decision-making and novel models for their information search process. . All existing algorithms such as collaborative or content filtering algorithms uses current user past experience data to recommend him new locations. These algorithms will not work if this current user has no past experiences data. To overcome from above problem author is asking to use C4.5 decision tree algorithms which take experiences of previous users and then build a model and if new user enter his requirements, then decision tree will predict best location based on his given input. Decision tree don't need new users past experience data.

1 INTRODUCTION

1.1 Problem statement:

Choosing a tourist destination from the information that is available on the Internet and through other sources is one of the most complex tasks for tourists when planning travel, both before and during travel. Previous Travel Recommendation Systems (TRSs) have attempted to solve this problem. However, some of the technical aspects such as system accuracy and the practical aspects such as usability and satisfaction have been neglected..

1.2 Motivation:

To address this issue, it requires a full understanding of the tourists' decision-making and novel models for their information search process. This paper proposes a novel human-centric TRS that recommends destinations to tourists in an unfamiliar city. It considers both technical and practical aspects using a real world data set we collected. The system is developed using a two-steps feature selection method to reduce number of inputs to the system and recommendations are provided by decision tree C4.5. The experimental results show that the proposed TRS can provide personalized recommendation on tourist destinations that satisfy the tourists.

1.3 Objective:

A tourist destination from the information that is available on the Internet and through other sources is one of the most complex tasks for tourists when planning travel, both before and during travel. Previous Travel Recommendation Systems (TRSs) have attempted to solve this problem. However, some of the technical aspects such as system accuracy and the practical aspects such as usability and satisfaction have been neglected. To address this issue, it requires a full understanding of the tourists' decision-making and novel models for their information search process.

2. LITERATURE SURVEY AND RELATED WORK

A literature survey for a decision tree-based recommendation system in tourism can provide valuable insights into existing research and help identify gaps in the field. Here's a brief overview of the key areas and topics you should consider including in your literature survey:

2.1 Introduction to Recommendation Systems:

Start with an introduction to recommendation systems in general, including collaborative filtering, content-based filtering,

and hybrid approaches. Explain their importance in the tourism industry.

2.2 Decision Tree Algorithms:

Review decision tree algorithms commonly used in recommendation systems, such as C4.5, CART, and Random Forest. Discuss their strengths and weaknesses in the context of tourism recommendations.

2.3 Tourism Recommendation Challenges:

Explore the unique challenges of recommendation systems in tourism, such as handling diverse user preferences, location-based recommendations, and dealing with dynamic data.

2.4 User Profiling:

Investigate how user profiles are created and updated in tourism recommendation
Techniques for capturing user preferences and behaviors.

3 EXISTING SYSTEM

Choosing a tourist destination from the information that is available on the Internet and through other sources is one of the most complex tasks for tourists when planning travel, both before and during travel. Previous Travel Recommendation Systems (TRSs) have attempted to solve this problem. However, some of the technical aspects such as system accuracy and the practical aspects such as usability and satisfaction have been neglected.

Disadvantages:

- All existing algorithms such as collaborative or content filtering algorithms uses current user past experience data to recommend him new locations.
- These algorithms will not work if this current user has no past experiences data.

4 PROPOSED WORK AND ALGORITHM

In this paper author is implementing C4.5 decision tree algorithm with MRMR features selection to recommend travel areas to tourist by using dataset from past tourist experiences. All existing algorithms such as collaborative or content filtering algorithms uses current user past experience data to recommend him new locations. These algorithms will not work if this current user has no past experiences data.

To overcome from above problem author is asking to use C4.5 decision tree algorithms which take experiences of previous users and then build a model and if new user enter his requirements, then decision tree will predict best location based on his given input. Decision tree don't need new users past experience data.

Advantages:

- We proposed a Decision tree-based tourism recommendation system. This system will help for getting more information on the basis of the people's review who visited the places.
- It will give the suggestion of all the desired place.

5 METHODOLOGIES

MODULES

A decision tree-based recommendation system for tourism typically consists of several modules to effectively provide recommendations to users. Here are some key modules:

Data Collection: Gather data related to tourists' preferences, historical choices, and contextual information such as location, weather, and time.

Data Preprocessing: Clean, transform, and prepare the data for analysis. This includes handling missing values, encoding categorical variables, and scaling numerical features.

Feature Selection/Engineering: Identify relevant features and create new ones if necessary to improve the decision tree's predictive power.

Decision Tree Algorithm: Build the decision tree model using algorithms like CART (Classification and Regression Trees) or ID3 (Iterative Dichotomiser 3).

Recommendation Generation: Use the decision tree to generate recommendations based on user input or current context. This module may involve traversing the tree to find the most relevant travel options.

User Interface: Develop a user-friendly interface for users to input preferences, view recommendations, and provide feedback.

Feedback Loop: Incorporate user feedback to continuously improve the recommendation system. This may involve retraining the decision tree or adjusting its parameters.

Evaluation: Assess the system's performance using metrics like accuracy, precision, recall, and user satisfaction surveys.

Personalization: Implement mechanisms for personalizing recommendations, taking into account each user's unique preferences and behavior.

Integration: Integrate the recommendation system into tourism-related platforms or apps, such as travel websites or mobile applications.

Scalability and Performance Optimization: Ensure the system can handle a large number of users and recommendations efficiently.

Monitoring and Maintenance: Continuously monitor the system's performance and make updates as needed to keep it relevant and accurate.

6 RESULTS AND DISCUSSION

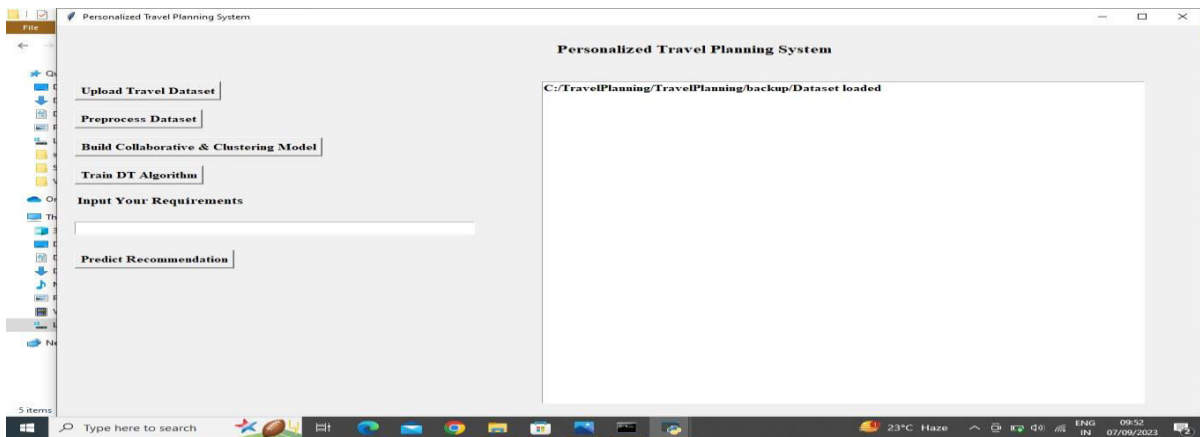


FIG 1 UPLOAD TRAVEL DATA SET

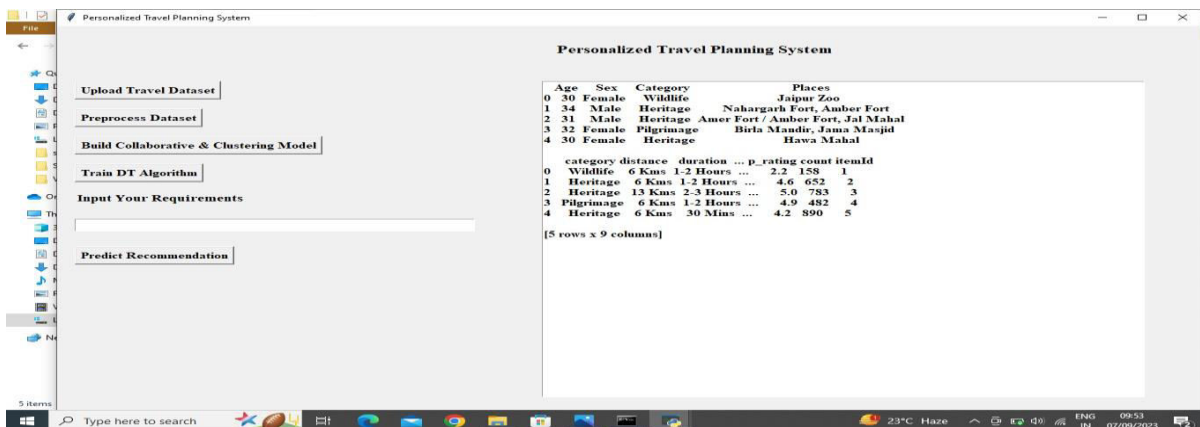


FIG 2 PROCESS DATA SET SCREEN

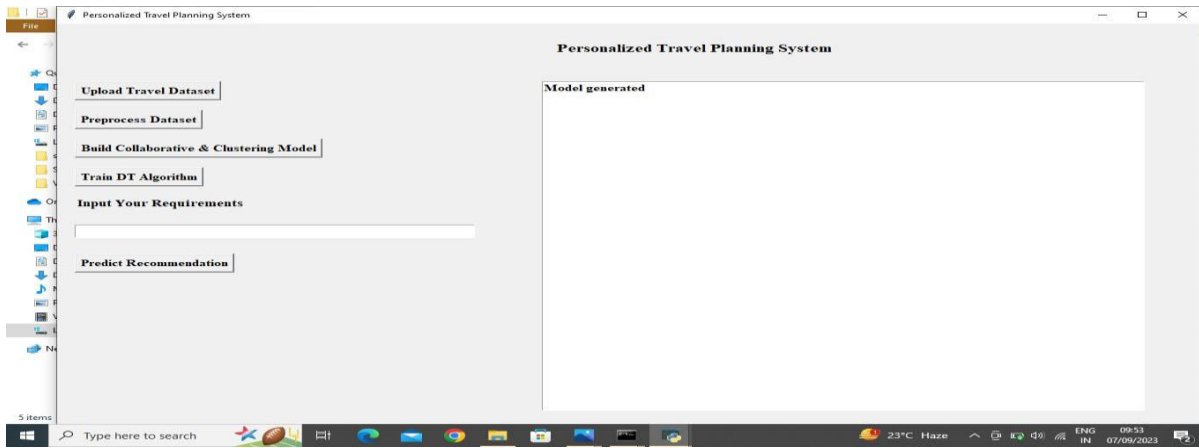


FIG 3 BUILD COLLABORATIVE & CLUSTERING MODEL

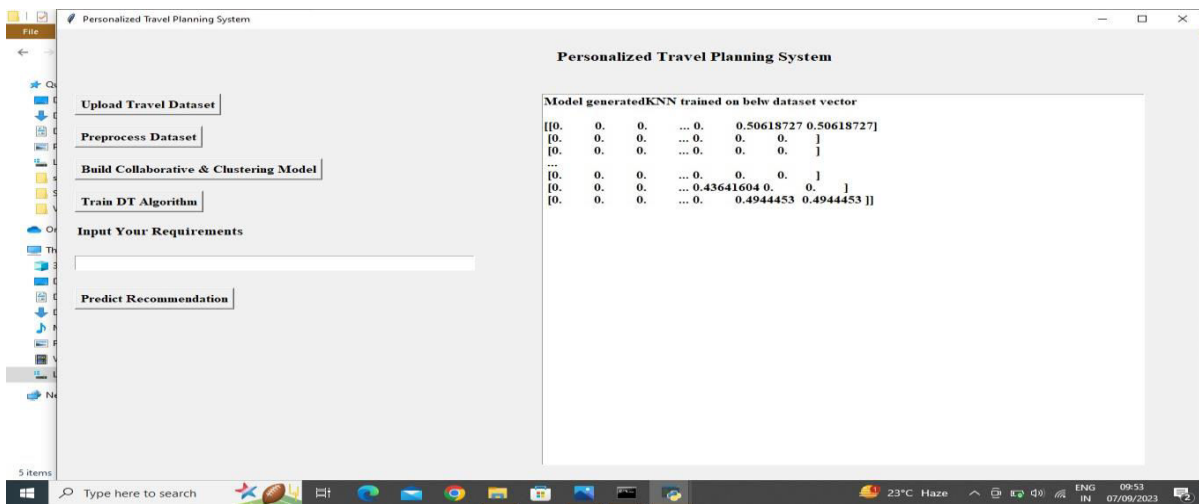


FIG 4 TRAIN DT ALGORITHM SCREEN

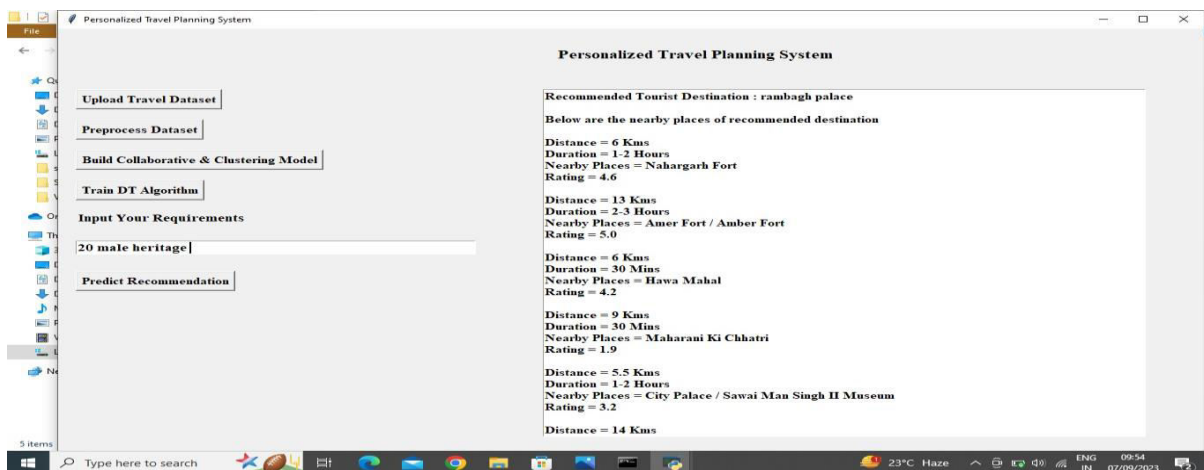


FIG 5 OUTPUT SCREEN

7.CONCLUSION

A decision tree based tourist recommendation system has been presented in attempt of solving the current challenge of the destination TRS. The data set has been decomposed into two sub data sets using relevant tourism domain knowledge. This was done to increase classification accuracy rate and to reduce the complexity of the decision tree. The optimal decision trees from NMIFS with the highest accuracy rate and simplicity (i.e. less number of leaf and tree size) have been constructed for destination choice. The decision rules from decision trees were extracted. It can be seen that NMIFS is the optimum method because it uses fewer number of feature than MRMR for both of the data sets. Finally, the experimental results confirm applicable of the proposed a TRS. The proposed TRS satisfies the tourists' requirements who plan to visit or during their visit the city of Chiang Mai.

8 REFERENCES

1. J.Chiverton, "Helmet Presence Classification with Motorcycle Detection And Tracking",IET Intelligent Transport Systems,Vol. 6, Issue 3, pp. 259–269, March 2012.
2. Rattapoom Waranusast, Nannaphat Bundon, Vasan Timtong and Chainarong Tangnoi, "Machine Vision techniques for Motorcycle Safety Helmet Detection", 28th International Conference on Image and Vision Computing New Zealand, pp 35-40, IVCNZ 2013.
3. Romuere Silva, Kelson Aires, Thiago Santos, Kalyf Abdala, Rodrigo Veras, Andr e Soares, "Automatic Detection Of Motorcyclists without Helmet", 2013 XXXIX Latin America Computing Conference (CLEI).IEEE,2013.
4. Romuere Silva, "Helmet Detection on Motorcyclists Using Image Descriptors and Classifiers", 27th SIBGRAPI Conference on Graphics, Patterns and Images.IEEE, 2014.
5. Thepnimit Marayatr, Pinit Kumhom, "Motorcyclist"s Helmet Wearing Detection Using Image Processing", Advanced Materials Research Vol 931- 932,pp. 588-592,May-2014.
6. Amir Mukhtar, Tong Boon Tang, "Vision Based Motorcycle Detection using HOG features", IEEE International Conference on Signal and Image Processing Applications (ICSIPA).IEEE, 2015.