MIT | Academy of Engineering

School Of Computer Engineering and Technology

Presentation for SY Minor Project(Review 1)

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Laptop Recommendation System

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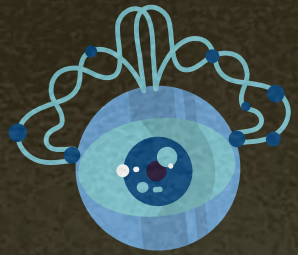
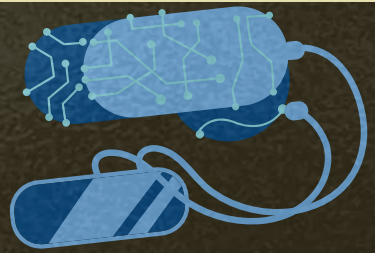


Introduction

The continual growth of the Web has led to rapid expansion of e-commerce among other things. The large amount of product information on the Web poses great challenges to both customers and online businesses.
More customers are turning towards online shopping because it is relatively convenient, reliable, and fast; yet such customers usually experience difficulty in searching for products on the Web due to information overload.
Online businesses have often been overwhelmed by the rich data they have collected and find it difficult to promote products appropriate to specific customers.

There is also the problem of ineffective utilization of the available large amount of product information from online transactions to support better decision making by both buyers and sellers.

To address these information overload problems, e-commerce stores are now applying mass customization principles not to the products but to their presentation in the on-line store. One way to achieve mass customization in e-commerce is the use of recommender systems.



Good communication is the bridge between confusion and clarity

Problem Statement

Implementing an interface to provide suggestions and recommendations regarding various choices of laptops to the people.

Objectives to be achieved

To create personalized recommendation system which would easily access information about laptops.

Save time of reading through electronic documents.

Achieving a simple user interface.

To Make decisions easy for people.

LITERATURE REVIEW

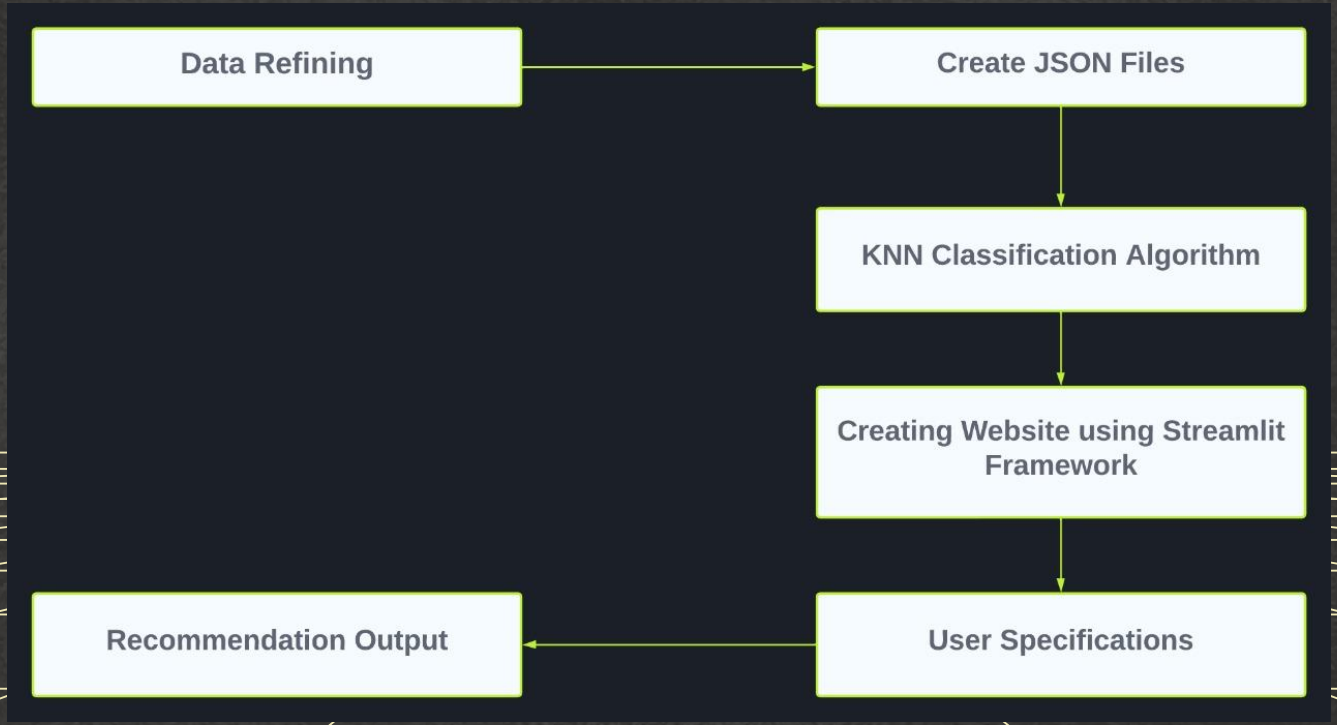
Sr. No.	Publisher	Paper TItle	Author Names	Method / Technique used	Comments
1.	International Journal of computer science and Information Technology and Security. 2012	Fuzzy logic Based Personalized Recommender System.	Ojokho, B.A.Samuel , Omisore , Ogunniyi.	Recommender System and Fuzzy logic System also known as the nonlinear mapping of an input data set to a scalar output data set is used.	Fuzzy Near compactness (FNC) concept is employed to measure the similarity between consumer needs and product features in order to recommend optimal products to potential buyers. Fuzzy sets have attracted growing attention in modern information technology and data analysis.
2.	IEEE, Proceedings of Sixth International Conference of Machine learning and Cybernetics,	Content Recommendation System Based on Private Dynamic user profile.	Ting Chen, Wei-Li Han, Hai-Dong Wang, Bin Xu.	Agent based Personalized Recommendation method called Content based Recommendation Algorithm based on private Dynamic user	Here the content based recommendation algorithm collects the private data of the user such as schedules, favorite websites and personal emails which creates a big issue

	Hongkong. August 2007.			profile.	regarding the privacy of the user. Though we get good & helpful recommendations but the privacy is breached,
3.	International Conference on Data & Information Science : Journal of Physics.1192.2019	Ontology based Conversational Recommender System for recommending Laptop.	M.S. Ayundhita , Z.K.A. Baizal , Y Siboconi	Conversational recommender system (CSR) , Interaction generate method & Ontology. Here the CSR interacts with the iterative conversation with users to find out customer needs and to provide the most accurate recommendation.	In this Conversational Recommendation System, the system interacts or asks questions which acts the same like a professional seller. The user involved in this test shows that a recommendation system that prioritizes functional requirements is more helpful in the product selection than a recommender system commonly used in e-commerce.
4.	International Journal of Engineering Trends & Technology. Volume 4 Issue5 - May 2013.	A Survey of Recommendation System : Research challenges.	Lalita Sharma , Anju Gera.	Recommendation System Techniques used - 1) Collaborative filtering process. 2) Content Based process. 3) Hybrid process.	Here the author has penned down the problems which are challenging for the present recommendation system with respect to recommendation quality and privacy aspects.
5.	IEEE, Proceedings of Third International conference on Intelligent Sustainable Systems [ICISS 2020]	Gadget Recommendation System using Data Science.	A Pushpalatha, Harish Sanmugam , J Jeya , Pradeep K , Madhu Bala S.	AI based recommendation system, K - means algorithm. K means the algorithm is specially tuned to match the user input using a wide range of extracted data which was pre-processed.	Here, Basic AI algorithm and Flutter which is an open source software development kit created by Google to build high performing apps is used. No such exceptional work is done, the basics are used for building recommendation systems.
6.	IJNMT, Vol. IV, No.1 | June 2017	Implementation of Topsis Method In Web Based System Recommendations For Students Laptop Selection	Adhi Kusnadi and Edwin Kurniawan	TOPSIS - This method is widely used to solve decision making because the concept is simple, easy to understand, computationally efficient, and has the ability to measure the relative performance of decision alternatives.	In making a recommendation system, using the TOPSIS method is the recommended one because the concept is simple, easy to understand, efficient, and has the ability to measure the relative performance of alternative decisions. According to the implementation, the recommendation system with the TOPSIS method has a 70% accuracy rate. The system accuracy rate of 70% of the data that has been tested and compared to manual calculation. And the satisfaction level of respondents on the system recommendation with an average rate value is enough and good.
7.	International Journal of Computer Applications (0975 – 8887) Volume 105 – No.14, November 2014	Opinion Observer: Recommendation System on E-Commerce Website	Mohammad Daoud, S.K Naqvi, and Asad Ahmad	Demographic Technique, Sorting Algorithm - Demographic recommenders systems intend to categorize the user based on personal attributes and make recommendations based on demographic classes. They easily refined the user query and found the result.	In this paper, we used a text mining approach to mine product features, opinions and their semantic similarity from Web opinion sources. The consumer can clearly see the strengths and Weaknesses of each product in the minds of existing consumer's opinion.

8.	Springer 20 July 2012	A proactive personalised mobile recommendation system using analytic hierarchy process and Bayesian network	Kam Fung Yeung, Yanyan Yang, and David Ndzi	Bayesian Network Algorithm, Analytic Hierarchy Process - A Bayesian network is a probabilistic graphical model that combines the advantage of CF and CBF. AHP-MCR approach provides the flexibility to add/remove contextual criteria in different scenarios and domains.	An analytic hierarchy process based multi-criteria ranking (AHP-MCR) approach has been developed and used to rate recommendations in a variety of domains. Additionally, a Bayesian network algorithm is applied to solve the cold-start problem in recommendation systems. The weights of the various contexts (criteria) are automatically adjusted using individual-based and/or group-based (group decision making) assignments. Additionally, a Bayesian Network algorithm has been applied to solve the cold-start problem inherent in recommendation systems.
9.	International Journal of Machine Learning and Computing, Vol. 9, No. 4, August 2019	Contextual Sentiment Based Recommender System to Provide Recommendation in the Electronic Products Domain	N. A. Osman, S. A. M. Noah, and M. Darwich	Collaborative Filtering, Sentiment Analysis - which filters information by exploiting the recommendation of other similar users. This technique recommend items to a user based on similarities between the past behavior of the user and that of like minded people sentiment analysis is used to determine the	We present a contextual information sentiment based model for the recommender system by making use of user comments and preferences to provide a recommendation. The purpose of this approach is to avoid term ambiguity which is a so -called domain sensitivity problem in recommendation.

				words or sentences that have sentiment value.	
10.	IJCCS (Indonesian Journal of Computing and Cybernetics Systems) Vol.15, No.3, July 2021, pp. 307~316	Decision Support System for Laptop Selection Using AHP Method and Profile Matching	Muhammad Mukharir and Retantyo Wardoyo	AHP Method, PM Method, SAW Method - AHP is a multi-criteria decision-making technique in which decision makers set priorities and determine decisions by making pairwise comparisons between criteria to obtain priorities in each hierarchy. PM method is used to assess criteria that are close to the ideal value desired by decision makers. To calculate the final score recommendation of a laptop product used for the SAW method.	To calculate the final score recommendation of a laptop product used for the SAW method. The input values for the SAW method are the value of the weighted criteria for the weighted calculation of the AHP method, the value of the calculation results of the PM method, and the value for calculating the cost and benefit criteria using linear interpolation.The output of the SAW method is the recommendation score of a laptop product.

PROPOSED BLOCK DIAGRAM



METHODOLOGY

- First we will take the dataset , refine it in jupiter notebook and then create the lists and then create the JSON files buy dumping it..
- Then we will write the KNN algorithm in the VScode.
- Now the framework will be build by using the Streamlit as the total coding part is in python.
- As the framework is done. We will run the it in the Streamlit.
- The webpage will appear and the specifications are to be given according to the user.
- The number of laptops for recommendation should be decided. The laptops will be recommended

K-NEAREST NEIGHBOUR ALGORITHM

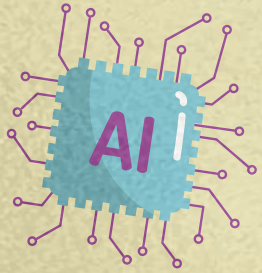
1. The algorithm is used to solve the classification model problems. K-nearest neighbor basically creates an imaginary boundary to classify the data.
2. When the new data points come in, the algorithm will try to predict that to the nearest of the boundary line.
3. Therefore, larger k value means smother curves of separation resulting in less complex models.
4. Whereas, smaller k value tends to overfit the data and resulting in complex models.

Applications

- Easy and good recommendation
- Time Efficient
- Diversity in Selection
- Choice Flexibility
- Well Organized Framework
- Up-To-Date Functioning

FUTURE WORK

Electronic gadgets have become vital in basic need of individual. The advances in technology, makes it necessary to satisfy different functional needs of users. Recently with rapid development of technology, smart devices and communication networks spring up to cover every aspect of user's activity. These data can also be trained and modelled for future use to cope with the upcoming technological innovations.



DRAWBACKS

As such for drawbacks, it is a freshly brewed idea which would obviously have it's flaws.

Lacks programming support as of now.

Change of Data due to quick update on devices.

Change in user preferences.

CONCLUSION

We propose a personalized attribute-based recommender system as a solution to less frequently purchased products. Our proposed system incorporates a set of techniques for mining the requirements of customers and the attributes of laptop products, in order to recommend optimal products to prospective buyers of laptop computers.

The system is able to provide online buyers with information on the products that could best meet their individual needs. The system also has the potential of increasing sales for online businesses, thereby making online shopping more interesting and profitable to both buyers and sellers.

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THANK YOU

ANY QUESTIONS ?