# Blog Recommendation System

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*Abstract:*

*TheincreasinguseofcomputersandotherelectronicGadgetsbyanindividualin theirdailylivehasmadearecommendationsystemanecessarycomponent.Itis because of the amount of information on internet continues to expand dramatically. The Recommendation System (RS) is a system which collects information from users about their preferences for a collection of things and assists them in making judgments from among the available options. As evidencedbydiversecontribution,sincetherecentpast,alargevarietyofRSare growing in tandem with the rise of web-based information; these types of recommendation systems are being used in variety of sectors, ranging from simple to more sophisticated objects. Through this project, we aim to help users where they will get to see blogs from different genres provided by Blog Recommendation System which will suggest blogs based on their preferences. Alongwitheveryrecommendedblog,userswillalsobeabletoseeasummaryof it so that they know before-hand what the blog isabout.*

*Keywords: content-based filtering, Collaborative filtering, Knowledge based filtering, Text summarization (Extractive summary), Recommendation system.*

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## I.    Introduction:

Duetothelargeamountofmaterialonasuccessfulblog,reviewingandlocating theblog-articlethatbestsuitstheblogger'sneedscantakealongtime.Thishas led the users face the problem which is information overload. So, it has been a habit of ours to provide recommendation system to others depending on their interests in order to meet their needs in numerous categories. We hereby address this issue by introducing blog recommendation system wherein the users would find different kind of blogs from different genres which is provided by blog recommendation system. System will suggest blogs based on their interest. However, as the internet has grown in popularity, a vast amount of information has become available. Summarizing vast amount of text is challenging for humans. So, in face to this question we will be providing a brief summaryofeveryrecommendedblog,asaresultuserswillalsobeabletoview a brief summary of it so that they know what the blog is about before they visit it.

## II.    Related works:

As mentioned in Improving a recommender system through integration of user profiles: A semantic approach [1] the authors proposed that users can befound in numerous social networks, each of which can be used to gather information on them. In face to this question, they present a semantic approach which is help to identify user's interest more accurately through the integration of user profilesbyexaminingvariousdatasourcethattheyarepresentin.Theyperform a case-study where the solution was coupled into a recommendation system which focused in software engineering domain and that domain

knowledge is based in ontology. However, this methodology led to a problem which is Data accuracy(Somesocialloginscancontainfalseinformation)andtherearepeople that do not use social media, for all different kind of reasons. Because of this recommendermodelmayexcludeabigpartoftargetaudienceifitonlyusesthe social medialogin.
As mentioned in Item-based collaborative filtering recommendation algorithms

[2]  the authors proposed a new algorithm for collaborative filtering which is item-based collaborative filtering algorithm. They compare this approach to previous technique which is User-based collaborative filtering technique(k- nearest neighbour based collaborative filtering) and for this method they found thatthesesystemsfacedcertainlimitationsduetoincreaseinnumberofvisitors on web and amount of available information such as: Difficulty in producing high quality recommendation and Challenges in performing many recommendations per second to facilitate millions of users and item despite presence of data sparsity. So, the proposed approach avoids this bottleneck by exploring the relation between items rather than between users. In order to evaluate the model performance and compare it result with other models they use MAE (Mean Absolute Error) which is utilized to measure error between prediction and actualvalue.

As mentioned in Knowledge-based recommendation: A survey [3] the authors discussed the ideas in order to develop knowledge-based recommendation system using classification framework. As compare to other techniques in this technique KBRS relies on the knowledge of human experts, which is encrypted in the system and applied to the input data to generate recommendations. A user can get a recommendation supported his specific profile and thereforethe behaviour of different users won't be taken into consideration in the least. Mainly this approach is used for overcome the limitations of the common recommendation techniques which are content-based andcollaborative-

filtering. In collaborative-filtering mainly there are 4 problems: - New-user problem, New-item problem, The grey ship problem and Sparsity. However, in Content-based there are 3 problems: - Limited content analysis, Over- specialization and New user problem. Therefore, KBRS was introduced to overcome these drawbacks.

Text summarization Techniques: A brief survey [4] The technique called extractive text summarization is illustrate by the authors. Extractive text summarising approaches generate summarise by selecting a portion of the source text's sentences. The most important sentences from the input are summarisedinthesesummaries.Asingledocumentsorcollectionofdocuments canbeusedasinput.Theauthorsexplainthreereasonablydistincttasksthatall summarizersexecuteinordertobetterunderstandhowtheywork.1)Createan intermediate version of the input text that expresses the text's main points. 2) Based on the representation, assign a score to the sentences. 3) Choose a summary that is made up of a few sentences. Apart from this; Topic representation approaches, frequency-driven methods, graph-based and machinelearningtechniquesaresomeofthemostoftenutilisedmethodologies.

**Proposed system:**
After analyzing different techniques for making recommendation system most commonandeffectivetechniquesarecontent-basedandcollaborative-filtering. So, in order to create our blog recommendation system, we mainly focus on thesetwotechniques.Firstofall,wedividearticles(whicharementionedinour dataset) into categories and their sub-categories. So, on sign-up page we provide different categories related to computer science and ask users toselect at-list5categoriesinordertorecommendarticlesiftheyarenew.Bydoingthis weexcludethecold-startproblem.Thistechniqueisknownasknowledge-based recommendation. This will help us in building home page for user which will show different blogs based on selected categories and sub-categories. Besides this, sometimes users get bored by reading thesame type of articles and they want to read articles of different topics. Therefore, to overcome this problem we have two methods. First is as we mentioned that we divide the articles into categories and their sub-categories so, our model will recommend articles of same categories but different sub-categories to users so they can read different articles. Second, we mainly use collaborative filtering in ourmodelbecausethismethodwillprovidenotonlythesamearticlesbutitwill also provide different articles which are liked and rated by otherusers.

Apart from this, we also provide summary of each and every article so the user can easily know what the article is about. For this we are using extractive text summarization technique because the most important sentences from the input are summarized in this summary. Not only a single document but collection of documents can also be used as input. Therefore, we are using the extractive text summarization technique for summarize the most important information about an article.

**Implementation:**
**Webapplication:**

● User interface has been developed using HTML, CSS and JS. It contains websitelandingpage(Homepage),Loginpagewhichisforexistingusers, Sign in page for new users which includes area of interest page to build their profile for better recommendation. Above all pages are linked with hyperlinks.

● Final website will have linked using Flask framework as backend part will beready.

**Recommendation model:**

● Wefounddatasetcontainingonly6000entries;aswedidn'tfindenough data about blogs to train our model. So, for now we are dividing this dataset into categories and their sub-categories. The model will also recommend based on the categories in which users had shown interest.

## III.    Conclusion:

The vast volume of material on a popular blog has led the users to face the problem which is information overload. Besides this, a large amount of information has become available, making it a challenge for humans to summarize large amounts of text. In order to exclude these issues our idea is to create a recommendation system for different articles in which we preliminary focus on content-based, collaborative-filtering and knowledge-based recommendationsystem.Fromtheabove-mentionedtechniquesmostcommon and useful techniques are content-based and collaborative-filtering. These two techniques are mainly used in order to create an effective recommendation system. However, these two techniques have some drawbacks too. For surpassing the limitations of these two techniques Knowledge-based recommendation system (KBRS) is used. Apart from this, this review consistsan overview about extractive text summarization approach too. The main purpose of providing this summarizing technique is to give a brief summary of every recommendedblog,asaresultuserwillbeabletoviewabriefsummarybefore read it.

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