MONITORING OF ONLINE USER PERFORMANCE THROUGH SEQUENTIAL BEHAVIOUR PATTERN

1 Mr. A. SUDHEER, 2 D. NEHA, 3 D. VISHWANATH

4 D. TEJA, 5 B. VIVEK

1Assistant Professor, Department of CSE, Sri Indu College of Engineering and Technology-Hyderabad

2345Under Graduate, Department of CSE, Sri Indu College of Engineering and Technology-Hyderabad

ABSTRACT

Online shopping is growing on large scale. People purchase their products via internet. They just have to choose their products and make the payment. Users get their products on doorstep. Online shopping had made people's life easier and faster. As online shopping is increasing, large amount of data on people's online activities have become available on web. Use of such data can benefit a lot of applications. User behaviour, online customer classification can be extracted from these web data. We proposed a system where we can extract the user's online shopping behaviour. System will extract user's online behaviour pattern and will show in graphical format. This graphical format helps the admin during decision making process. We propose a graphical hidden state model based on statistical features and integrate all available information sources to simulate the decision- making process. The proposed system, lead to nearly 30% of improvement on million click datasets. This system will be online web application where many products will be displayed on web page. User can view and purchase the products. User sequential behaviour pattern is tracked by the system and is put in graphical format which helps during decision making process. This system helps the admin to know most frequently purchased products by the customer. Admin will also get to know which products are in demand. So, he can make the decision based on the online behaviour pattern of the customer. As user behaviour pattern is put up in graphical format it will be easier for the admin to view the data and can make decision process faster and can come up with solution quicker.

Keywords: **Cloud and Big Data, Decision Making Process**

INTRODUCTION

The project documentation targets academic reviewers, particularly professors and external examiners, responsible for assessing its scholarly significance. It begins with a concise executive summary, providing an overview of the project's importance and key findings. Comprehensive project details follow, covering scope, objectives, methodologies, and technology usage. Emphasis is placed on displaying user behavior patterns through graphical representations. The documentation concludes by discussing the project's implications and potential avenues for future research, ensuring that the research's academic value is clear to non-technical reviewers.

Data mining, also known as knowledge discovery, involves analyzing data from various perspectives to extract useful information for revenue increase or cost reduction. It encompasses techniques like Generalized Sequential Pattern (GSP) algorithm, which is crucial in sequence mining from large databases. Data mining works by analyzing relationships and

patterns in transaction data, seeking classes, clusters, associations, and sequential patterns. Major elements include data extraction, transformation, loading, storage, access, analysis, and presentation. Different analytical techniques such as neural networks, genetic algorithms, decision trees, nearest neighbor method, and rule induction are applied, along with data visualization.

In the project, data mining plays a pivotal role in improving user preference modeling by analyzing online shopping behavior. It involves data collection, pattern discovery, predictive modeling, recommendation systems, graph analysis, segmentation, anomaly detection, performance optimization, and user retention prediction. By extracting insights from user behavior data, data mining enables accurate recommendation systems, optimized system performance, and enhanced user satisfaction. The documentation underscores data mining's significance in unlocking valuable insights from online shopping data, empowering the project to offer personalized, trustworthy, and engaging experiences to users.

Understanding user performance is essential for:

•Optimizing User Experience: By analyzing how users interact with a platform, developers can identify pain points and areas for improvement.

•Personalization: Insights into user behavior allow for the customization of content and services, enhancing user satisfaction.

•Predictive Analysis: Patterns in user performance can help predict future behaviors, enabling proactive measures to retain users and improve engagement.

•Resource Allocation: Identifying which features are most used or where users spend the most time can inform better resource distribution and development focus.

LITERATURE SURVEY

"Enhancing Online Shopping Experience through Data Mining Techniques" paper explores the application of data mining techniques to improve the online shopping experience for users. By leveraging methods such as pattern discovery, predictive modeling, and recommendation systems, the study aims to enhance user preference modeling and increase user satisfaction. Through the analysis of online shopping behavior data, valuable insights are extracted to create personalized recommendation systems, optimize system performance, and predict user retention. The research emphasizes the significance of data mining in unlocking actionable insights from large-scale online shopping datasets, ultimately enabling platforms to deliver more tailored and engaging experiences to users.

User behavior patterns in e-commerce platforms using data mining techniques. By analyzing transaction data and user interactions, the study aims to identify classes, clusters, associations, and sequential patterns to understand user preferences and behaviors. Through the application of analytical techniques such as neural networks, genetic algorithms, and decision trees, the research seeks to uncover actionable insights for improving recommendation systems, segmentation strategies, and anomaly detection mechanisms. The findings highlight the importance of data mining in revealing underlying patterns in user behavior, providing valuable insights for e-commerce platforms to enhance customer experiences and drive business growth.

Prediction of user retention in e-commerce platforms using data mining techniques. By analyzing user behavior data and transaction histories, the study aims to develop predictive models to forecast user churn and retention rates. Through the application of techniques such as machine learning algorithms and predictive modeling, the research seeks to identify key factors influencing user retention and develop strategies to mitigate churn. The findings underscore the importance of data mining in predicting user behavior and facilitating targeted retention efforts, ultimately helping e- commerce platforms enhance customer loyalty and long-term profitability.

SYSTEM ANALYSIS

EXISTING SYSTEM

Cloud computing is seen as an essential, low-maintenance way to share resources. More and more, moving the systems that manage the local information into cloud servers has become the standard procedure, clients being able to benefit of premium services whilst saving big money on the local infrastructures. Users that use cloud computing are no longer faced with the disadvantages of the problematic local solutions for storing and management of data. Using policy of encrypted data based on access control is the most common privacy method. This policy cab ensures privacy of data that represent sensitive information. The privacy based on access control means to allow access to data only to authorized persons. The access mechanisms to the sensitive data have problems if they can be shared without strong privacy.

DISADVANTAGES

1. Data is often in cloud or big data with shared access with third party, which makes it more vulnerable to attacks. Usually, moving data between sides can be risky on client privacy. **Key Distribution:** Distributing signature keys securely to authorized users or entities can be challenging. If not handled properly, it can lead to key exposure or unauthorized access. Implementing secure key distribution mechanisms is crucial

Human Error: Users may accidentally mishandle their signature keys, leading to access problems or security vulnerabilities. Training and user education are essential to mitigate this.

PROPOSED SYSTEM

In our paper we are forwarding a case study that is built on the basis of three models: first model consists of the cloud's architecture, which will contain all the transactions for the other models; the second model is based on the concept of transactions' manager, who provides Keys, grand users, manages the queries and so forth; and finally, the last model is the one concerned with the clients, i.e. the staff that already has the right to use data in the cloud or analysis of big data. The cloud architecture is managed by providers of services. In addition, we consider that the case study is based on the assumption of zero trust between the three models. This situation is due to the fact that all transactions will be carried out by a third party and data movements through various levels of security. Among the tasks of the transactions' manager we might enumerate: user registration, generation of system parameters, user revocation, and the verification of the identity of data owners. The clients' model is a dynamic one, depending on the kind of transactions and data used.

ADVANTAGE OF PROPOSED SYSTEM

- They proposed protecting from concerns of attacks on the data stored in the cloud using model segregation of the data.
- The data value in cloud gained during acquisition is separated in multi-location to support privacy of clients.
- Access to data in cloud presents no risk since loading and using the data is allowed only to authenticated users and owners of data, with mapped manner to view the information set together.

IMPLEMENTATION

MODULE DESCRIPTION

1.Admin Login:

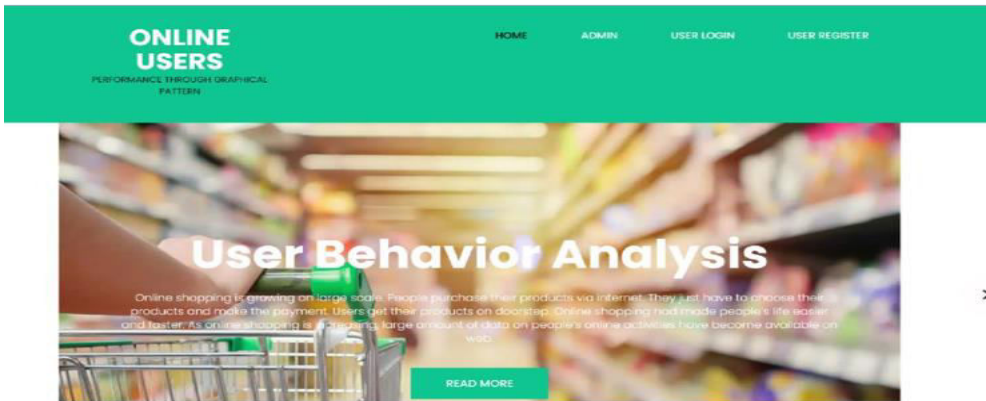Admin can access the authorized modules by login to the system using his credentials.

- Add Products: Admin can add products by entering product details like product image, cost, and description.
- View User: Admin can view registered user details.
- View Products: Admin can view products which added into the database.
- View User Behavior in graphical format: User behavior pattern is fetched by applying effective algorithm and is displayed in graphical format.
- View Feedback: Admin can view feedback of the user.

2.User Login:

User must register with his details and system will provide him with id and password.

- View Products: User can view the products and their cost.
- Products Details: User must select the product of his choice and view further details of that product.
- Add To Cart: User can add products into cart, if he wants to purchase the product.
- Make payment: System will display total cost. User can make payment by selecting the mode of payment.
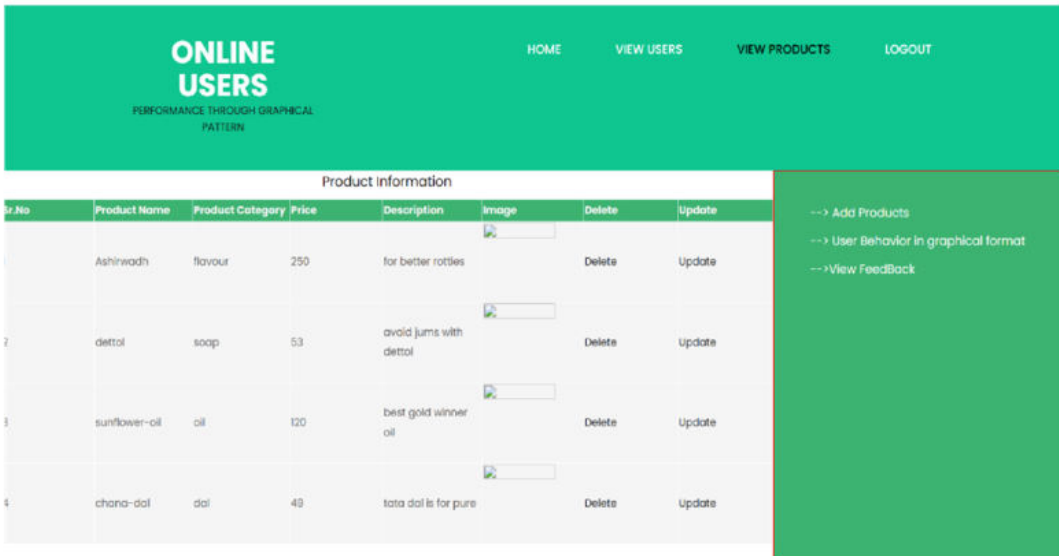- Add Feedback: Customer can add feedback about any product.

RESULTS

HOME SCREEN

VIEW USERS SCREEN

PRODUCTS SCREEN

CONCLUSION

This comprehensive analytical study delves into the multifaceted landscape of online user behaviour models, employing a diverse array of methods and algorithms. It spans various domains, focusing on the identification of both normal and anomalous online user behaviour. The research scrutinizes the characteristics of Intrusion Detection Systems (IDS) as a tool for classifying user behaviour, shedding light on their role in bolstering online security.

The study also places a magnifying glass on Target Vue, a visualization system, exploring its utility in understanding and dissecting different facets of user behaviour communication. It integrates feature extraction techniques such as Principal Component Analysis (PCA) to unearth anomalies in user behaviour, thereby enhancing the ability to detect and address potentially harmful or suspicious activities.

A pivotal aspect of this research is the evaluation of classification algorithms, with Restreet emerging as the most promising contender after undergoing a rigorous examination with various parameters. Furthermore, the study presents a comparative analysis of different neural network algorithms, assessing their applicability in precise sales prediction tasks.

In addition to algorithmic considerations, this study delves into the world of metrics, scrutinizing those used to evaluate user behaviour across two Online Social Networking (OSN) platforms. Moreover, the research investigates the possibilities of enhancing search engine services by dissecting and analysing user queries. This holistic examination of user behaviour models, detection systems, visualization tools, and predictive algorithms provides a rich and diverse understanding of this multifaceted domain, offering valuable insights into both security and user experience optimization.

REFERENCES

[1] Alexandr Seleznyov, Finland, "A methodology to detect temporal regularities in user behaviour for anomaly detection", Network Security and Intrusion Detection, part 9, pp. 339-352, 2016.

[2] Nan Cao, Conglei Shi, Sabrina Lin, Jie Lu, Yu-Ru Lin, Ching-Yung Lin, "TargetVue: Visual Analysis of Anomalous User Behaviors in Online Communication Systems", IEEE Transactions on Visualization and Computer Graphics, vol. 22, pp. 280-289, 1 January 2016.

[3] P V Bindua, P Santhi Thilagama, India, "Mining Social Networks for Anomalies: Methods and Challenges", Journal of Network and Computer Applications, Elsevier, pp. 1-22, 25 Feb 2016.

[4] Meng Bi, Jian Xu, Mo Wang, Fucai Zhou, "Anomaly detection model of user behavior based on principal component analysis", Springer, 21 January 2016.

[5] Guirong Chen, Ning Wang, Fengqin Zhang, Hua Jiang, China, "Understanding the Time Characteristic of User Behavior on Online Forums", IEEE International Conference on Big Data (Big Data), 978-1-4799-9926-2/15,pp. 2300-2306, 2015.

[6] Pran Dev, Dr. Kulvinder Singh, Dr. Sanjeev Dhawan, India, "Classification of Malicious and Legitimate Nodes for Analyzing the Users' Behavior in Heterogeneous Online Social Networks", 1st International conference on futuristic trend in computational analysis and knowledge management, 978-1-4799-8433-6/15, pp. 359-363, ABLAZE 2015.

[7] Hui Yuan, Wei Xu, Mingming Wang, China, "Can Online User Behavior Improve the Performance of Sales Prediction in E-commerce?", IEEE International Conference on Systems, Man, and Cybernetics, 978-1-4799-3840-7/14, pp. 2347-2352, October 5-8, 2014.

[8] Francesco Buccafurri, Gianluca Lax, Serena Nicolazzo, Antonino Nocera, "Comparing Twitter and Facebook user behavior: Privacy and other aspects", Computers in Human Behavior , Elsevier, 0747-5632, pp. 87-95, 10 June 2015.

[9] Mona Gupta , Happy Mittal , Parag Singla , Amitabha Bagchi, "Characterizing comparison shopping behavior: A case study", ICDE Workshops, IEEE, 978-1-4799-3481-2/14, pp. 115-122, 2014.

[10]Ke XIE, Huijia YU, Rongwei CEN, "Using log mining to analyze user behavior on search engine", Front. Electr. Electron. Eng., Higher Education Press and Springer-Verlagkshop HotCloud. 2009.