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Coding on Cloud

Case Study

Florida, USA-Based Data Industry Gets Solution in Categorizing Users Using Machine Learning

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Technologies Utilized:
Machine Learning Algorithms (K-means Clustering)
Data Analysis Tools
Feature Extraction Techniques

Industry: Data Analytics and Personalization

Client Overview:-
One of our clients from the USA has contacted us with use case of App preference tracking, how to use data and categorise the users based upon their activity. In this case study, we have aligned the best Machine learning solutions pointed out by our ML experts in solving concerns raised by our client.

Problem Statement:-
With a vast dataset detailing the application users interact with and the data they consume across various categories (like Gaming, Shopping, Food, etc.), there's an opportunity to group users based on their app usage patterns. K-means clustering which could help to segment the user base into distinct clusters, where each cluster represent users with similar app preferences.

Sample Data:

The dataset includes:
• Unique user identification (userequipment_imeisv)
• The day of the week
• Byte counts for various app categories (both download and upload)
• Active milliseconds spent on these apps
• Counts of user apps across different categories.

Solution Provided:
Feature Extraction: The dataset comprises multiple features for each app category, such as the bytes downloaded/uploaded and the time spent. These features can be utilized to understand user preferences and habits.

Clustering: By applying the K-means clustering algorithm, users can be grouped into clusters based on their app usage patterns. For instance, a cluster might emerge that heavily uses 'Gaming' and 'Video' apps but very little of 'Financial' apps.

Personalization and Marketing: Once users are segmented into clusters, services can be tailored to each group. For example, if a cluster predominantly uses gaming apps, they can be targeted with gaming-related promotions or content. This ensures more relevant content delivery and potentially higher engagement rates.

Benefits to Client:

Personalized User Experience: Once users are segmented into clusters, platforms can offer personalized app recommendations or content. For example, users in the 'Gaming' cluster might receive recommendations for trending games.

Effective Ad Targeting: Ad campaigns can be more precisely targeted to specific clusters. This ensures higher relevancy and potentially better conversion rates.

Resource Allocation: Businesses can allocate resources more effectively. For instance, if a particular app category is gaining popularity, more resources can be channeled to support and promote that category.

Improved Customer Engagement and Retention: Tailoring services based on user cluster means delivering content and services that users find most relevant. This relevancy can lead to increased engagement and consequently higher retention rates.