IT-562
Recommendation Systems and Engines

Team- 404

Article Recommendation System

Result Report of Hybrid Model:

1. Existing User:

   Past Interactions:

eventStrength	title
3.735522	6 reasons why I like KeystoneML
3.726831	Auto-scaling scikit-learn with Spark
3.475085	5 reasons your employees aren't sharing their ...
3.475085	At eBay, Machine Learning is Driving Innovativ...
3.356144	Algorithms and architecture for job recommenda...
3.339137	10 Stats About Artificial Intelligence That Wi...
3.269033	AI Is Here to Help You Write Emails People Wil...
3.195348	Deep Learning for Chatbots, Part 1 - Introduction
3.104337	Graph Capabilities with the Elastic Stack
3.007196	Being A Developer After 40 - Free Code Camp
2.887525	Building with Watson Technical Web Series
2.855990	Worldwide Ops in Minutes with DataStax & Cloud
2.782409	5 Unique Features Of Google Compute Engine Tha...
2.687061	How to choose algorithms for Microsoft Azure M...
2.632268	Bad Writing Is Destroying Your Company's Produ...
2.608809	Creative Applications of Deep Learning with Te...
2.594549	How Netflix does A/B Testing - uxdesign.cc - U...
2.536053	Machine Learning Is No Longer Just for Experts
2.464668	How Google is Remaking Itself as a "Machine Le...
2.454176	Text summarization with TensorFlow

New Recommendations based on Hybrid Model:

contentId	title
3269302169678465882	The barbell effect of machine learning.
5092635400707338872	Power to the People: How One Unknown Group of ...
-7126520323752764957	How Google is Remaking Itself as a "Machine Le...
7395435905985567130	The AI business landscape
1415230502586719648	Machine Learning Is Redefining The Enterprise ...
-5756697018315640725	Being A Developer After 40 - Free Code Camp
7395435905985567130	The AI business landscape
-8085935119790093311	Graph Capabilities with the Elastic Stack
5250363310227021277	How Google is Remaking Itself as a "Machine Le...
638282658987724754	Machine Learning for Designers

2. New User:

Checks whether User already exists or not. If user doesn't exist, the system assigns the user an unique UserID and recommends the most popular articles from each Genre till 5 interactions. The system takes in the User Interaction after each Recommendation.

```
************NEW USER**************


Registered User[Y/N]: N
Your user Id is : 1042
Top 10 Recommendations :


1. Analyst: Google's cloud business could cause the stock to soar to over $900
2. Fooling The Machine
3. Apple Invites Media to 'Hello Again' October 27th Mac-Centric Event
4. Prototipação: erre cedo para acertar cedo - Hipsters #28
5. Stackdriver Trace for App Engine is GA; app latency has nowhere to hide
6. SOA com microserviços - Sensedia
7. Probabilistic Programming
8. Braincast 207 - A Revolução das Máquinas Inteligentes
9. Making digital strategy a reality in insurance
10. Introducing online resizing of Google Cloud Persistent Disks without downtime


Select Article number (0 for Search) : 3


You can select one of the actions below:
1.Like
2.View
3.Comment
4.Bookmark
5.Follow


Enter your entry : 1
```

3. Accuracy Results:

- The Training and Testing data is split on the based of a reference date. The ratio of Training to Testing Split is 4:1.
- We have used Recall-5 and Recall-10 method for testing the Accuracy of our model. (Recall at k is the proportion of relevant items found in the top-k recommendations).
- We have Compared our Hybrid Interactive Model (which uses Collaborative filtering and Content-based Filtering along with User Interactions and Time-based Weights) to pure Popularity based, Collaborative-based and Content-based approaches. The accuracy results are as shown below:

modelName	recall@10	recall@5
Popularity	0.341984	0.219637
Collaborative Filtering	0.415750	0.290335
Content-Based	0.510611	0.397852
Final	0.520583	0.394656