Ripe Pumpkins

YOUR ULTIMATE MOVIE GUIDE

Ripe Pumpkins ‘Pumpkinmeter’ can revolutionize movie recommendation experience.

Introduction- Why Leveraging Pumpkinmeter Score Insights Drives Customer Loyalty and Competitive Advantage?

You all are here because we know the importance of movie reviews and recommendations in today's digital age.

We will assess the initiative's potential and its implications for Ripe Pumpkins' future success in the next slides

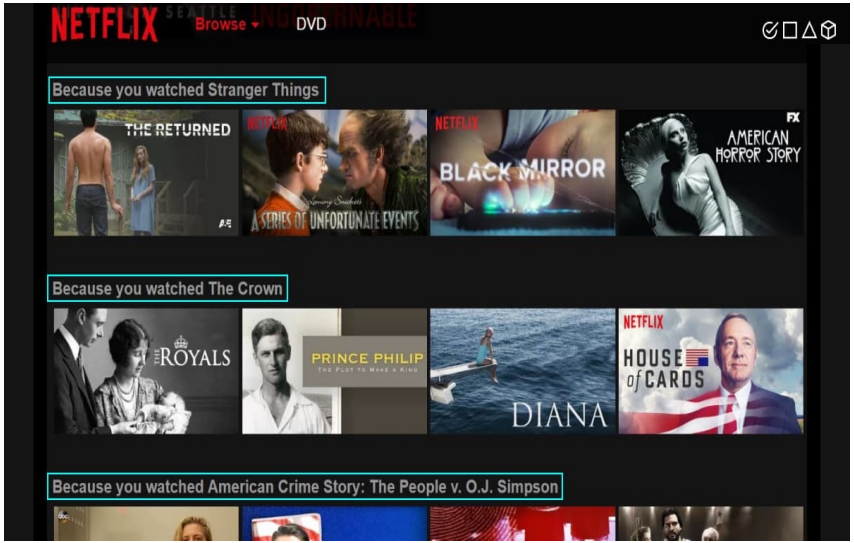
- Is there market potential?
- What features of Pumpkinmeter makes it achievable and sustainable?

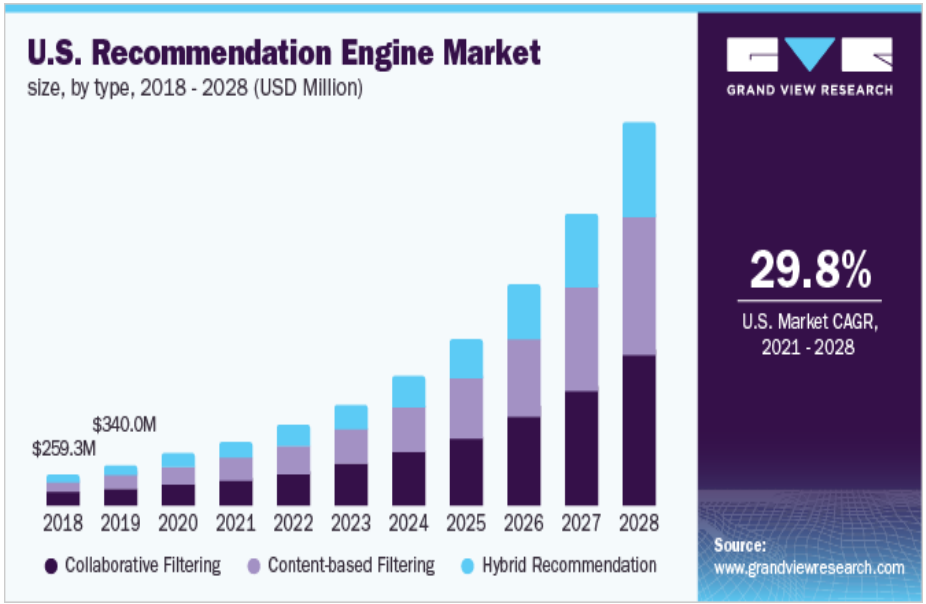
- Is Pumpkinmeter providing accurate recommendations?
- User 1 watchlist and recommendations results
- User 2 watchlist and recommendations results

- Insights
- Foresights

Is there market potential?

- According to a new report by Grand View Research, Inc.
  - The global recommendation engine market size is expected to reach USD 17.30 billion by 2028,
  - The market is expected to expand at a CAGR of 33.0% from 2021 to 2028.
- Recommendation engine is being used everywhere starting from retail, music applications, video platforms, movie.

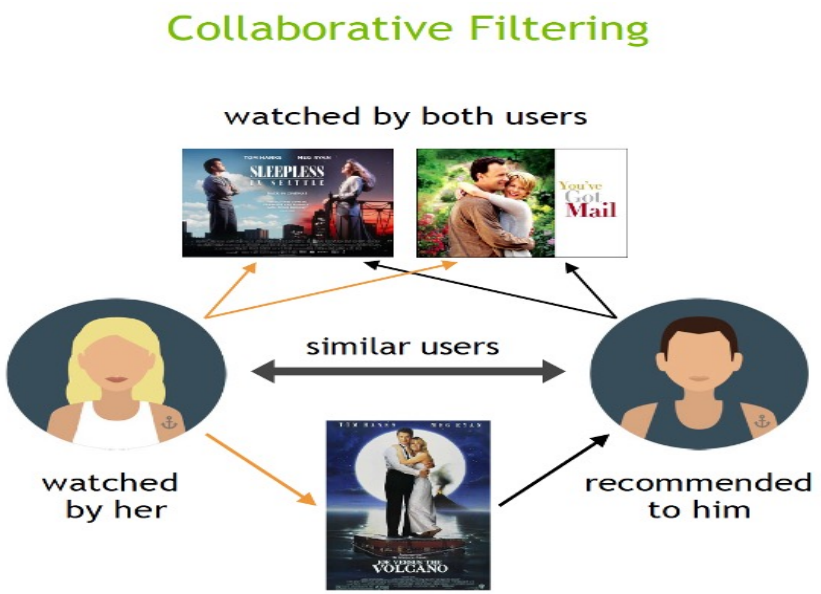




What features of Pumpkinmeter makes it achievable and sustainable?

- Recommender systems encompass techniques and algorithms for suggesting relevant items to users.
- Personalized recommendations are based on user preferences and viewing history.
- Improved search functionality.
- Pumpkinmeter utilizes User-based Collaborative Filtering as its recommendation system.
- Low costs due to the use of Spark technology for model training and reusability.
- Include relevant data and metrics to showcase the impact on customer behavior and feedback.
- Scalable for handling large volumes of movie data and user preferences
- Continuous learning and adaptation based on user feedback
- Flexible recommendation filtering using factors like genre and timestamp
- Integration of user feedback for refining recommendations
- Sustainable design with regular updates and maintenance

Is Pumpkinmeter providing accurate recommendations?



Pumpkinmeter is using collaborative recommendation, also known as collaborative filtering, involves predicting user interests by gathering preferences or taste information from a group of users.

•Dataset: GroupLens MovieLens Dataset

•Tested with movie and review list based on liking and interests of two different users.

•Algorithm used: Alternating Least Squares

•Trained on dataset with 27,000,000 ratings and 1,100,000 tag applications. Includes tag genome data with 14 million relevance scores across 1,100 tags

•Testing for top 15 recommendations with more than 25 and more than 100 reviews

Results:

- Achieved low average prediction error i.e. more accurate recommendations
- Recommendations tailored to each user's interests.
- Predicted rating for a particular movie for a given user.
- Better recommendations observed for movies with more than 100 reviews

User 1 watchlist and recommendations results

Reviewed 10 movies watched by User1 in the past. Movies genres listed are crime, drama, mystery, scifi, thriller and one for anime, adventure, romance.

```
(0,260,4), # Star Wars: Episode IV - A New Hope (1977)
(0,58559,4), # Dark Knight, The (2008)
(0,48516,3), # Departed, The (2006)
(0,593,4), # Silence of the Lambs, The (1991)
(0,32,3), # Twelve Monkeys (a.k.a. 12 Monkeys) (1995)
(0,79132,4), # Inception (2010)
(0,318,5), # Shawshank Redemption, The (1994)
(0,364,2), # Lion King, The (1994)
(0,858,5), # Godfather, The (1972)
(0,356,5) # Forrest Gump (1994)
```

Recommendations (movie-name, ratings, reviews) by Pumpkinmeter are mostly aligned to genres rated best by user.

```
TOP recommended movies for User 1 (with more than 25 reviews):
('Planet Earth II (2016)', 4.3361926630893315, 853)
('Planet Earth (2006)', 4.312682184100417, 1384)
('Band of Brothers (2001)', 4.253593879561944, 984)
('Blue Planet II (2017)', 4.250443625017688, 349)
('Life (2009)', 4.2419448598883704, 166)
('The Blue Planet (2001)', 4.217744131351459, 421)
('Frozen Planet (2011)', 4.203898463119426, 402)
('Cosmos', 4.193298933313592, 157)
('"Things I Like', 4.188455804323436, 30)
('The Reichenbach Fall (2012)', 4.167207554271638, 48)
("Won't You Be My Neighbor? (2018)", 4.159217682024021, 83)
('The Godfather Trilogy: 1972-1990 (1992)', 4.153614009560567, 421)
('Music for One Apartment and Six Drummers (2001)', 4.145544574312158, 31)
('Over the Garden Wall (2013)', 4.1433365188486135, 377)
('The Farthest (2017)', 4.1273209637729416, 28)
```

```
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('Planet Earth (2006)', 4.312682184100417, 1384)
('Band of Brothers (2001)', 4.253593879561944, 984)
('Blue Planet II (2017)', 4.250443625017688, 349)
('Life (2009)', 4.2419448598883704, 166)
('The Blue Planet (2001)', 4.217744131351459, 421)
('Frozen Planet (2011)', 4.203898463119426, 402)
('Cosmos', 4.193298933313592, 157)
('The Godfather Trilogy: 1972-1990 (1992)', 4.153614009560567, 421)
('Over the Garden Wall (2013)', 4.1433365188486135, 377)
('Alone in the Wilderness (2004)', 4.125838776352651, 343)
('"Civil War', 4.117653583820509, 431)
('Olive Kitteridge (2014)', 4.1051077804416956, 211)
('"Lives of Others', 4.097398034313056, 9670)
("Schindler's List (1993)", 4.093065821867768, 71516)
```

User 2 watchlist and recommendations results

Reviewed 10 movies watched by User2 in the past. Movies genres listed are romance, comedy, drama, and few for action, crime, adventure, war.

```
    (0,193886,2), # Leal (2018)
    (0,193868,4), # Dos tipos de cuidado (1953)
    (0,15,2), # Cutthroat Island (1995)
    (0,25,3), # Leaving Las Vegas (1995)
    (0,17,4), # Sense and Sensibility (1995)
    (0,52,4), # Mighty Aphrodite (1995)
    (0,94,3.5), # Beautiful Girls (1996)
    (0,101,4), # Bottle Rocket (1996)
    (0,118,4), # If Lucy Fell (1996)
    (0,920,5) # Gone with the Wind (1939)
]
```

Recommendations (movie-name, ratings, reviews) by Pumpkinmeter are mostly aligned to genres rated best by user.

```
TOP recommended movies (with more than 25 reviews):
('Connections (1978)', 4.972784990970419, 49)
('"I', 4.698024321335621, 85)
('"Lonely Wife', 4.689532334301891, 43)
('Он вам не Димон (2017)', 4.663090597476431, 26)
('"Hollow Crown', 4.650107488176603, 36)
('Hamlet (Gamlet) (1964)', 4.601264259880479, 37)
('Winter in Prostokvashino (1984)', 4.589377701769553, 67)
('Between the Folds (2008)', 4.584828588461592, 61)
("Mickey's Trailer (1938)", 4.582243192054774, 27)
("Won't You Be My Neighbor? (2018)", 4.5760024611808445, 83)
('Baseball (1994)', 4.571428071073244, 42)
('"Civil War', 4.565837238856659, 431)
('My Love (2006)', 4.562778882188419, 32)
('Queen: Days of Our Lives (2011)', 4.549557066263571, 32)
('Small Potatoes - Who Killed the USFL? (2009)', 4.539391643687392, 26)

TOP recommended movies (with more than 100 reviews):
('"Civil War', 4.565837238856659, 431)
('Casablanca (1942)', 4.495544998551394, 31095)
("Smiley's People (1982)", 4.479628675843423, 116)
('To Kill a Mockingbird (1962)', 4.454131258429257, 17988)
('Death on the Staircase (Soupçons) (2004)', 4.45267974733346, 130)
('All About Eve (1950)', 4.450888303246153, 5632)
('"Philadelphia Story', 4.449410062335382, 7828)
('Trouble in Paradise (1932)', 4.4471237590880115, 468)
('That Munchhausen (1979)', 4.437561953127243, 104)
('Planet Earth (2006)', 4.4363972587016995, 1384)
('The Adventures of Sherlock Holmes and Dr. Watson: Bloody Signature (1979)', 4.436343419948689, 141)
('Rear Window (1954)', 4.432485593585598, 22264)
('It Happened One Night (1934)', 4.431701435291398, 4750)
('Wild China (2008)', 4.42291534335733, 105)
('Witness for the Prosecution (1957)', 4.422858806261685, 2180)
```

Insights

Through the results of Pumpkinmeter we can get below insights:

- Deep insights into user preferences based on movie ratings
- Tailored movie recommendations through Pumpkinmeter score
- Can enhance retention rates with personalized recommendations
- Improved performance for popular movies (>100 reviews)
- Provides valuable insights for business decisions: trending genres, user preferences, content optimization

Foresights

The implementation of the recommendation engine highlights opportunities for ongoing model refinement and algorithm enhancement to further enhance recommendation accuracy and user satisfaction.

- Tune filtering algorithm with diverse user data for improved accuracy
- Incorporate genre and timestamp as factors for enhanced recommendation accuracy
- Encourage user ratings and feedback to refine the recommendation system
- Collect and analyze user feedback to identify areas for improvement
- Possibility of persisting the RDDs of model for future use to save time
- Adapt the model for web environments to provide online movie recommendations

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