

# MOVIE

# RECOMMENDATION

# SYSTEM

A Smarter Way to  
Recommend Movies



# OUR TEAM



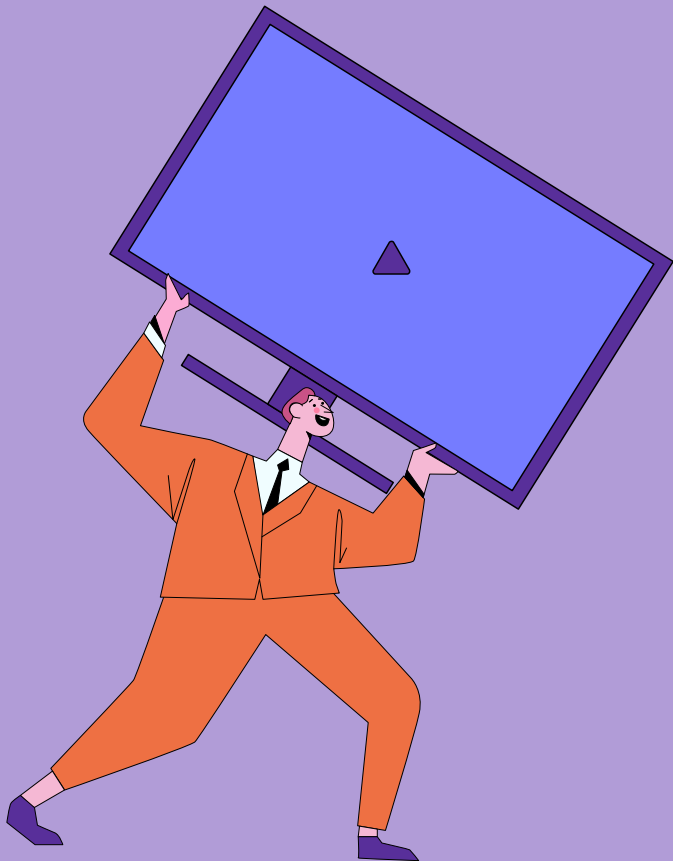
**WILL BENNETT**

Data Scientist who  
likes movies



**JAMES MEREDITH**

Data Scientist who  
REALLY likes movies



# BUSINESS PROBLEM

ACME+ needs a  
Recommendation System!



# THE DATA

The MovieLens Dataset

100,000

User Ratings

10,000

Popular Movies

# METHODS



## CONTENT-BASED

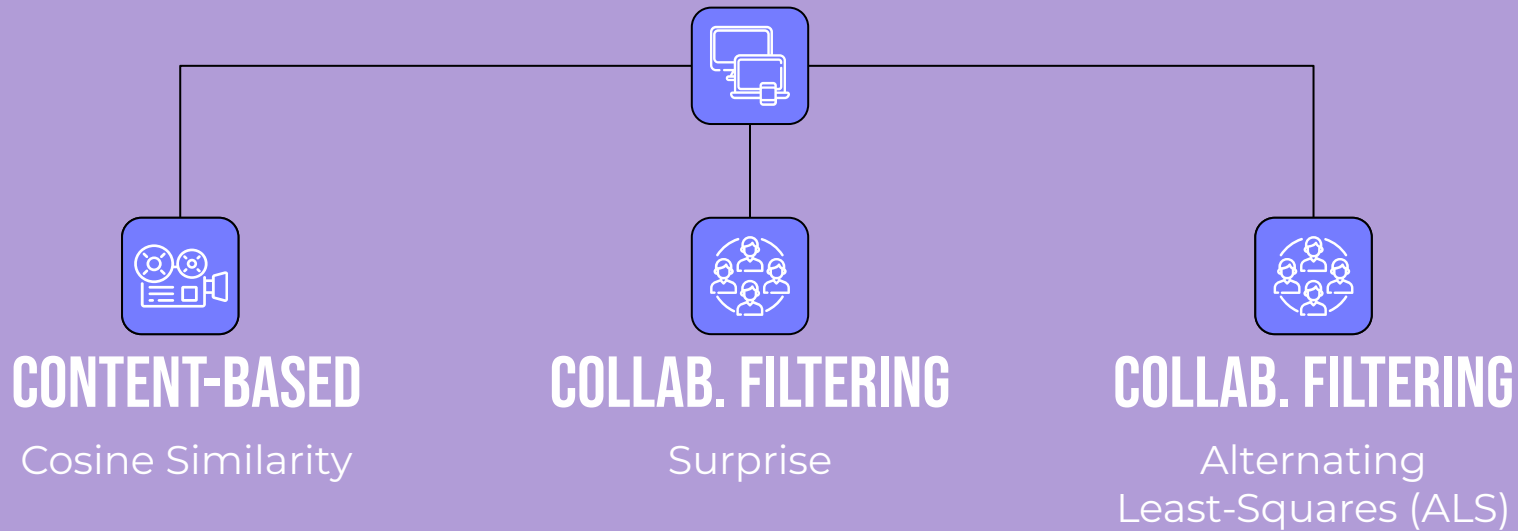
Uses movie features to  
recommend similar  
movies



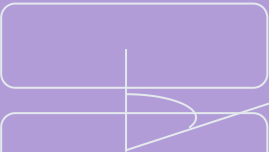
## COLLABORATIVE FILTERING

Uses user ratings to  
recommend movies  
similar users liked

# 3 MODELS



# RECOMMENDATIONS WITH COSINE SIMILARITY

	Feature 1	Feature 2	Feature 3	Feature 4	Feature 5
Movie 1					
Movie 2					
Movie 3					
Movie 4					
Movie 5					

# RECOMMENDATIONS WITH SURPRISE

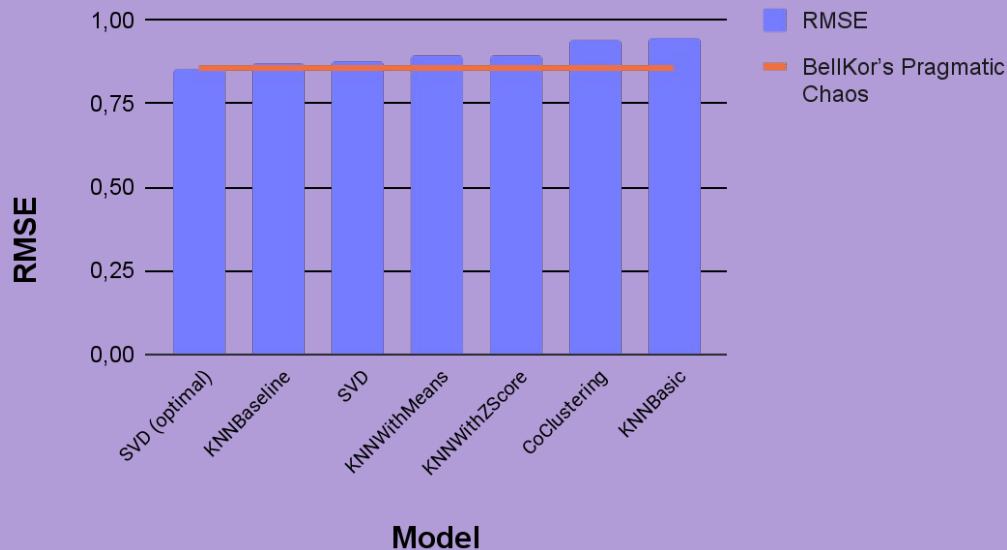
**SVD**

Algorithm Chosen via  
Surprise

**0.856**

RMSE Value Achieved

## MODEL RMSE





# RECOMMENDATIONS WITH ALS & SPARK

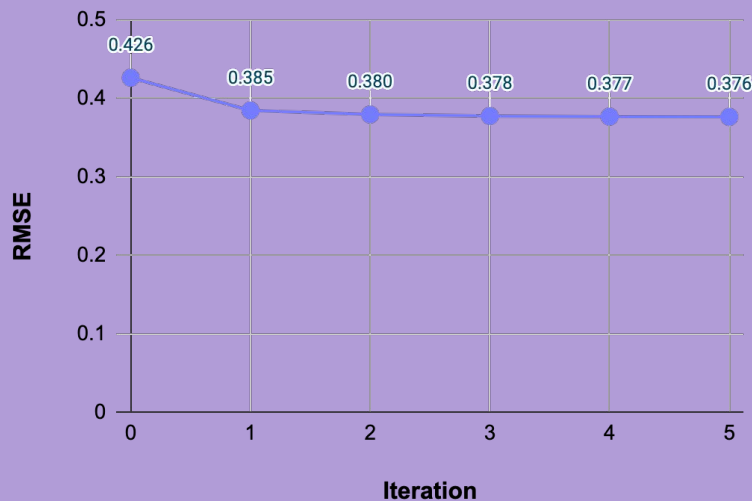
ALS

Implemented via pyspark

0.872

RMSE Value Achieved

ALS RMSE (BY HAND)



# ALS AT SCALE WITH SPARK



“The big data platform that crushed Hadoop”

— INFOWORLD



“Spark's analytics engine processes data 10 to 100 times faster than alternatives”

— IBM

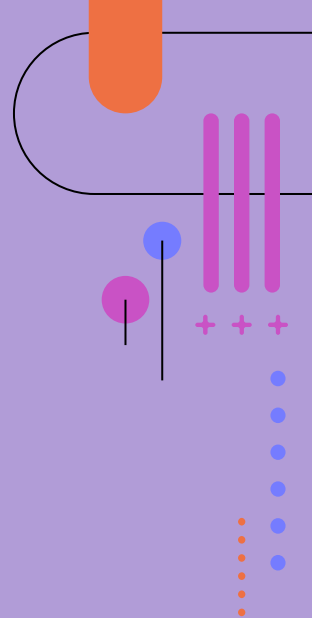


“Internet powerhouses such as Netflix, Yahoo, and eBay have deployed Spark at massive scale”

— DATABRICKS

# RECOMMENDATIONS

- ALS for efficiency
- Hybrid approach to handle cold start
- Spark for scale (big data)



# NEXT STEPS

## ENSEMBLE

Improve Accuracy with  
Ensemble Methods



## HYBRID

Implement a Hybrid  
model



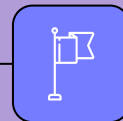
## SPARK

Scale with Large Data



## ITERATE

Deploy and Retest



# THANKS!

Do you have any questions?

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