Filmeve

Film recommendation for groups

2025-11-21 Diego Cantalapiedra

grouplens

movielens

1M

grouplens

movielens

32M

grouplens

movielens

100K

9.742 films

610 users

Feature engineering

17 features → 98 features

Estrategia general

Group

User 1

User 2 → Model →

User 3

Predicted ratings
of unseen films

r.Film 1

r.Film 2

r.Film 3

…

r.Film 200

→

Recommended films

Film 1

Film 2

Film 3

…

Film 10
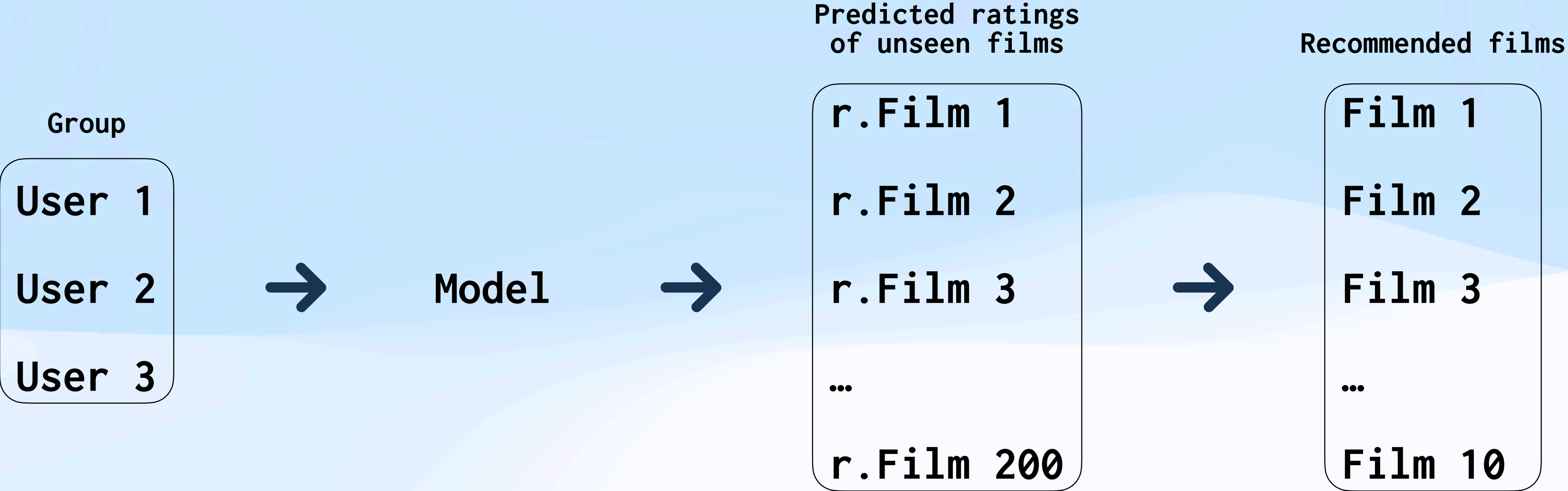
Machine learning models

model	train_rmse	test_rmse	train_mae	test_mae	train_r2	test_r2
Baseline (User Avg)	0.936800	0.924856	0.730359	0.722220	0.194168	0.196730
RandomForest	0.397497	0.741280	0.301390	0.560512	0.854916	0.483967
XGBoost	0.662813	0.728041	0.503423	0.551050	0.596603	0.502235
Stacked Ensemble	0.669130	0.725221	0.508684	0.549126	0.588877	0.506083

Stacked Ensemble: XGBoost, LightGBM, CatBoost, GradientBoosting, with a Ridge meta-learner.

Best model: Stacked Ensemble (Test RMSE: 0.7252)

Resultados

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========================================================================
USER PROFILES:
========================================================================


👤 User 43
   Ratings: 114 movies
   Average: 4.55 (±0.68)
   Range:   3.0 - 5.0 (median: 5.0)
   Type:    Generous rater, Consistent ratings
   Genres:  Comedy (44), Drama (42), Adventure (34), Children (32), Action (31)


👤 User 287
   Ratings: 150 movies
   Average: 2.61 (±1.50)
   Range:   0.5 - 5.0 (median: 2.5)
   Type:    Critical rater, Varied ratings
   Genres:  Comedy (74), Drama (64), Romance (33), Adventure (29), Thriller (27)
```

Resultados

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================================================================================
GROUP MOVIE RECOMMENDATIONS
================================================================================

Group: 2 users
Satisfaction: 4.04 / 5.0
Disagreement: 0.96
Fitness: 3.045
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Resultados

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================================================================================
RECOMMENDED SLATE:
================================================================================
 1. Seems Like Old Times (1980)
    Genres: Comedy|Romance
 2. Akira Kurosawa's Dreams (Dreams) (1990)
    Genres: Drama|Fantasy
 3. Back to the Future (1985)
    Genres: Adventure|Comedy|Sci-Fi
 4. Damned United, The (2009)
    Genres: Drama
 5. Ocho apellidos vascos (2014)
    Genres: Comedy
 6. Memories of Murder (Salinui chueok) (2003)
    Genres: Crime|Drama|Mystery|Thriller
 7. On the Ropes (1999)
    Genres: Documentary|Drama
 8. Tekkonkinkreet (Tekkon kinkurîto) (2006)
    Genres: Action|Adventure|Animation|Crime|Fantasy
 9. Battlestar Galactica: The Plan (2009)
    Genres: Action|Adventure|Drama|Sci-Fi
10. Thin Line Between Love and Hate, A (1996)
    Genres: Comedy
```

Resultados

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================================================================
INDIVIDUAL USER SCORES:
================================================================
   User  43: 5.00
   User 287: 3.09


================================================================
GENRE DISTRIBUTION:
================================================================
   Drama                    5 ( 50.0%)
   Comedy                   4 ( 40.0%)
   Adventure                3 ( 30.0%)
   Sci-Fi                   2 ( 20.0%)
   Fantasy                  2 ( 20.0%)
   Crime                    2 ( 20.0%)
   Action                   2 ( 20.0%)
   Documentary              1 ( 10.0%)
   Romance                  1 ( 10.0%)
   Mystery                  1 ( 10.0%)
   Thriller                 1 ( 10.0%)
   Animation                1 ( 10.0%)
```

Descubrimientos

- ❌ Action Consensus → 80% Comedy (wanted Action)
- ❌ Romance + Indie → 95% Comedy (wanted Romance)
- ❌ Sci-Fi + Animation → 95% Comedy (wanted Sci-Fi)
- ❌ Nolan Enthusiasts → 85% Comedy (wanted Sci-Fi/Thriller)
- ❌ Miyazaki Fans → 85% Comedy (wanted Animation)

Users discovery: genre must be top 1-2, 50%+ exclusivity, 0.5+ differential

- 0 Action specialists
- 0 Romance specialists
- 0 Horror specialists
- 0 Thriller specialists
- 1 Comedy specialist
- 1 Drama specialist
- 3 Spielberg fans