# RECSYS CHALLENGE 2021

TV Show Recommendation

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# Overview

## Challenge

- TV program dataset
- Recommend relevant  items to users
- Implicit feedback URM
- Evaluation based on MAP@10

## Solution

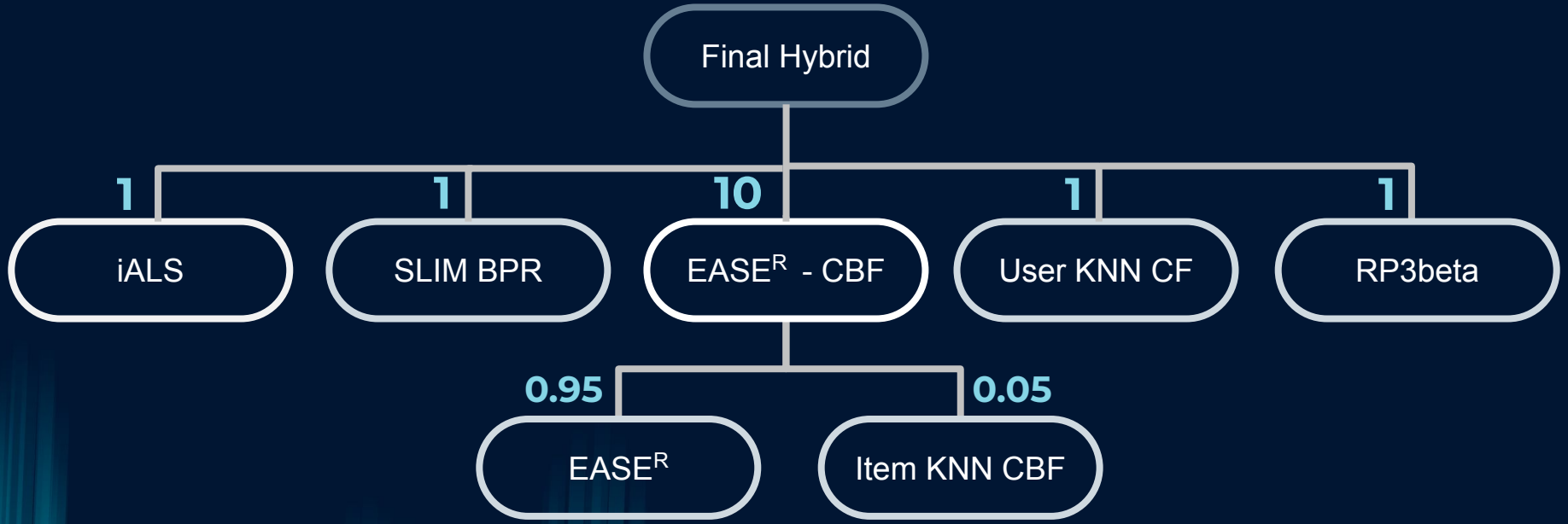
- Hybrid recommender mixing CBF and CF methods

## Results

- Ranked 13th out of  72
- MAP@10 on public leaderboard :  0.48549
- MAP@10 on private leaderboard : 0.48462

# Project timeline

# Final Hybrid Recommender



# Final Hybrid Recommender

## Item KNN CBF

topK : 7000
Shrink : 10000
Feature weighting : tf-idf
Similarity : cosine

## $EASE^R$

Default parameters

## iALS

Num_factors : 37
Alpha : 0.69

## SLIM BPR

L1_norm : 0.05
L2_norm : 0.55

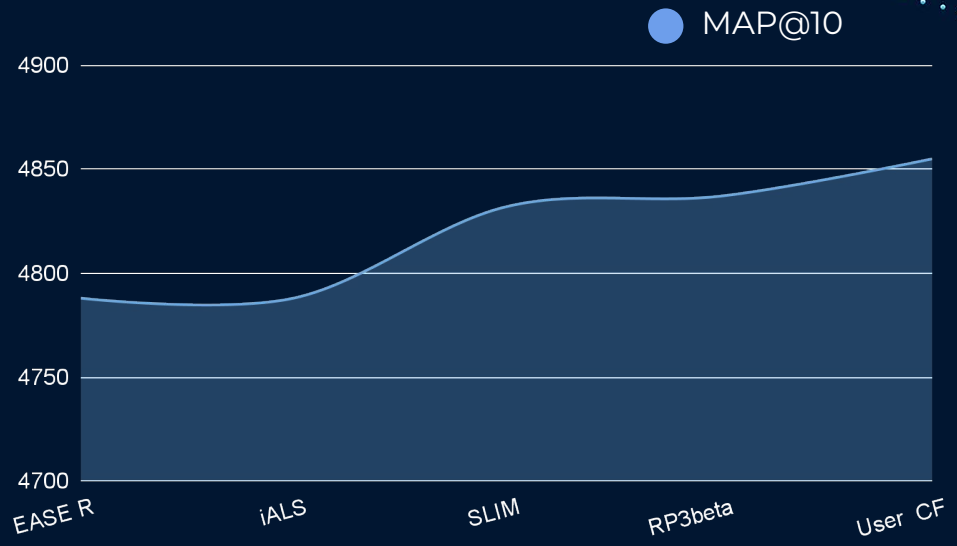
## RP3beta

topK : 111
Alpha : 0.775
Beta : 0.495

## User KNN CF

topK : 432
Shrink : 34
Similarity : Jaccard

# Performance evolution




Performance increase on the public leaderboard by adding base recommenders to the hybrid

# Experiments

## Successful

- $EASE^R$
- Weighted hybrid with normalized predictions
- Augmenting the UCM with ICM data (subgenre and channel)
- Bayesian and Random hyperparameter optimization
- Retraining model on full dataset (0.43 → 0.47)

## Unsuccessful

- Pipelining
- LightFM
- P3alpha
- Hyperparameter tuning on $EASE^R$

# Improvement Ideas

- Use different hyperparameters for different clusters of users
- Add derived user  and item features

# Thanks for your attention

# THANKS!

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