RECSYS CHALLENGE
Final Considerations

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01
02
03

PRINCIPLES → the main ideas at the base

TIMELINE → the progression of these ideas

HYBRIDIZATION → how different ideas come together

INDEX OF ANALYSIS

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PRINCIPLES

More degrees of freedom during optimization

Clean Basic Structure + Complete Reimplementation

following base work of ⚹ /lampajr/MusicRecommender + integration with Course Repository ⇒ • more control over code
• clearer thoughts
• customized pipeline

Add Side Information

stacking vertically URM and ICM.T brought a strong increase in performances ⇒ more data available during training

Feature Weighting

TF-IDF & TF-IDF Transpose only to avoid more parameters
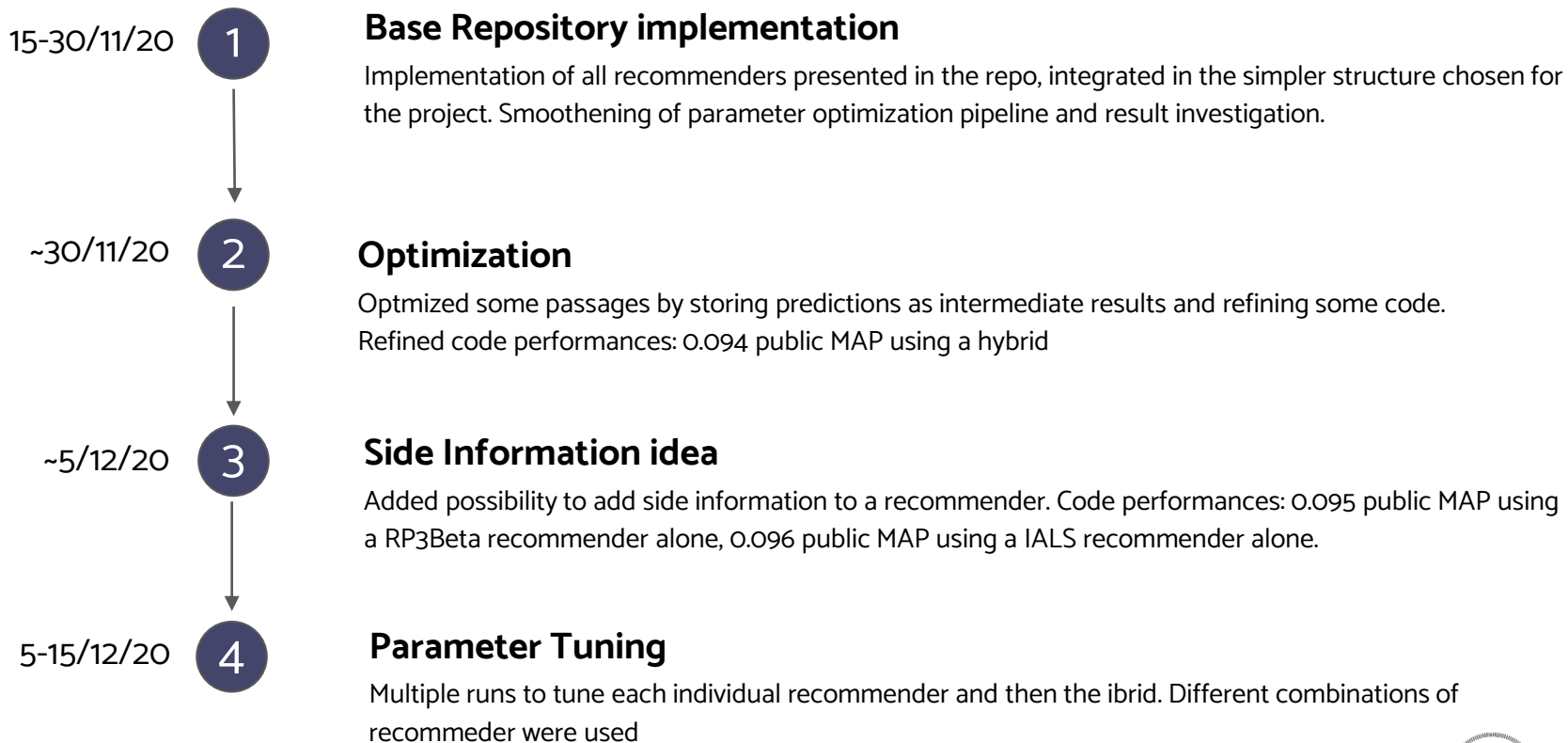
10-fold Crossvalidation + Low number of submissions

to achieve a **more robust error evaluation** and unbiased evaluations on test set

Fast Hybrid Weights Optimization

by separating individual recommender optimizations ⇒ **storing and reuse top K of individual predictions**

3. Principles

TIMELINE

15-30/11/20   **1**

Base Repository implementation

Implementation of all recommenders presented in the repo, integrated in the simpler structure chosen for the project. Smoothening of parameter optimization pipeline and result investigation.

~30/11/20   **2**

Optimization

Optmized some passages by storing predictions as intermediate results and refining some code.
Refined code performances: 0.094 public MAP using a hybrid

~5/12/20   **3**

Side Information idea

Added possibility to add side information to a recommender. Code performances: 0.095 public MAP using a RP3Beta recommender alone, 0.096 public MAP using a IALS recommender alone.

5-15/12/20   **4**

Parameter Tuning

Multiple runs to tune each individual recommender and then the ibrid. Different combinations of recommeder were used

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HYBRIDIZATION

Given some **precedent runs** and given the **individual performances** of each optimizer, a **dominion for the weights** of each recommender was defined.

Solutions including more recommenders, proved less performant, maybe due to the larger parameter space.

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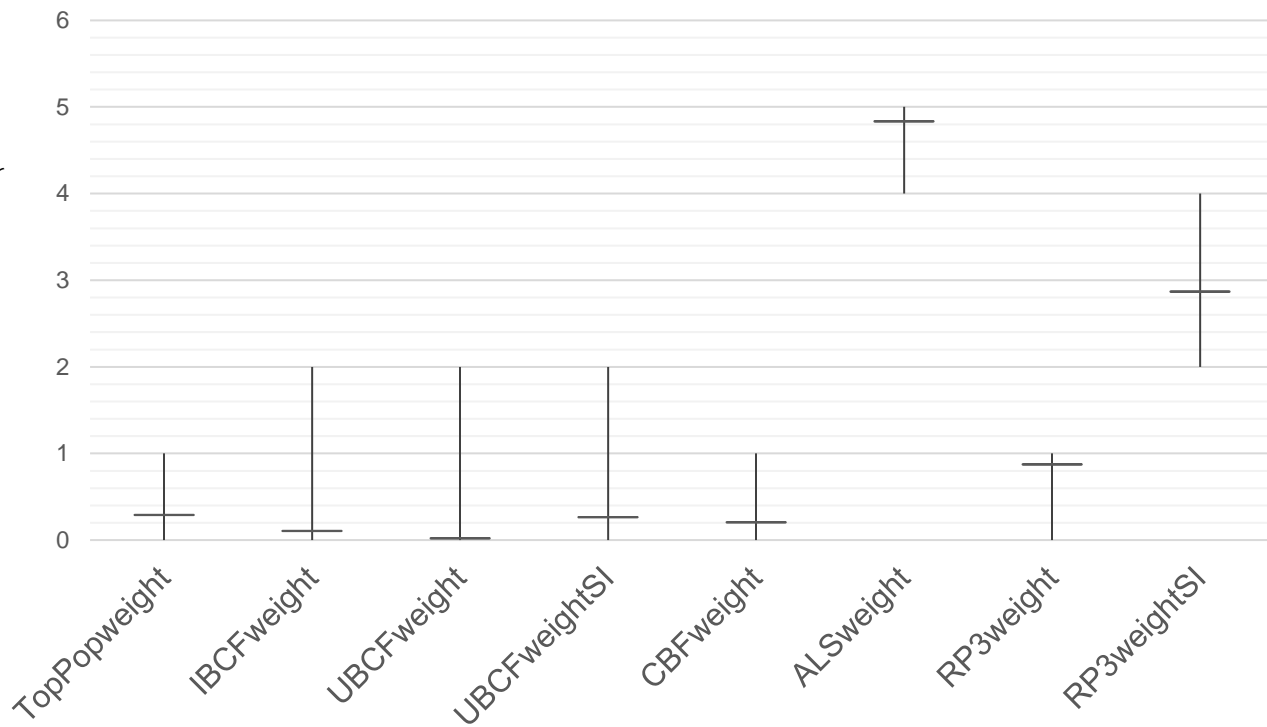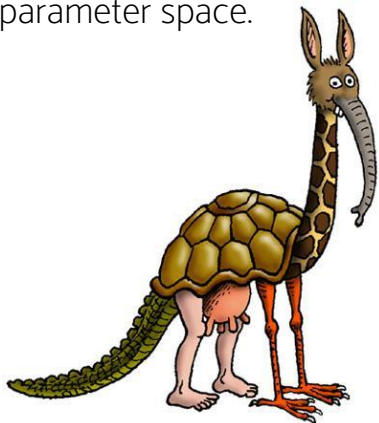
Thank you for your attention!
Any Questions?

Code and optimization results will soon be available on

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