

Matrix Factorization Challenge

Who will implement the most accurate recommender?

In this challenge, your task is to develop a CF movie recommender system based on Matrix Factorization.

Task:

- Implement a MF algorithm, by using an adequate framework, e.g., the PyTorch framework (<https://pytorch.org>).
- Use the movie data and ratings available in the MovieLens dataset "ml-latest-small" on <https://grouplens.org/datasets/movielens/latest/>.
- You are allowed to use all data inside the dataset. Additionally, you can extend the content description of movies using The Movie Database (TMDB) API, where you can create a free account and generate an API key following the documentation (<https://developers.themoviedb.org/3>).
- Solutions are evaluated based on the RMSE metric.
- In TeachCenter, you can download a **Jupyter Notebook**, which contains prepared code parts for preparing the data and evaluating the results. Please use this notebook for your task and implement your solution in there, by extending the code.

Submission Details:

- Solutions need to be submitted in TeachCenter as Jupyter Notebook.
- Submission deadline is **Monday, 04.07.2022, 23:59**.
- You are allowed to solve this challenge individually or in groups of maximum 3 persons.
- Participating in the challenge is voluntary.
- The top-3 solutions in the ranking will receive 10 bonus points for the exam (each group member). All other solutions that achieve a RMSE of less than 2.0 on the test set, will receive 5 bonus points (as well for each group member).

The task will be presented in the lecture on 17.06.2022, 9am. In case of questions, please contact Sebastian Lubos (slubos@ist.tugraz.at).