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Top 5 Open-Source Machine Learning Recommender System Projects With Resources

A recommender system, or a recommendation system, is a subclass of information filtering systems that seeks to predict the “rating” or “preference” a user would give to an item. They are primarily used in commercial applications. [Wikipedia](#)



Mrinal Walia · Follow

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| *There are majorly six types of recommender systems that work primarily in the Media and Entertainment industry:*

- *Collaborative Recommender system,*
- *Content-based recommender system,*
- *Demographic-based recommender system,*
- *Utility-based recommender system,*

- *Knowledge-based recommender system*
- *Hybrid recommender system*

What is the purpose of using Recommender systems?

Recommender systems aim to predict users' interests and recommend product items that are quite interesting. They are among the most powerful machine learning systems that online retailers implement to drive sales.

In today's article, we are going to talk about five 5 open-source ML Recommender Systems projects/ Repository On Github To Help You Through Your DataScience Projects to enhance your skills in the field of data science and AI.

Note: In this article, we are going to talk about some really good open-source ML Recommender Systems projects/ Repository which you can use in your projects. To read more about each of them I recommend following the link given along the project.

Bonus

RSPapers: Must Read papers on Recommender Systems. *This repository provides a list of papers about Recommender Systems including comprehensive surveys, general recommender system, social recommender system, deep learning-based recommender system, cold start problem in recommender system,*

efficient recommender system, exploration and exploitation problem in recommender system, explainability in recommender system as well as click through rate prediction for recommender system, knowledge graph for recommender system, review based recommender system, conversational recommender system and industrial/practical recommender system. For more posts about recommender systems, please transfer to [ML_RSer](#).

Github Repository

Documentation



Having a good theoretical knowledge is amazing but implementing them in code in a real-time machine learning project is a completely different

thing.

You might get different and unexpected results based on different problems and datasets. So as a Bonus,I am also adding the links to the various courses which has helped me a lot in my journey to learn Data science and ML.

I am personally a fan of DataCamp, I started from it and I am still learning through DataCamp and keep doing new courses. They seriously have some exciting courses. Do check them out.

Data-scientist-with-python

Data-scientist-with-r

Machine-learning-scientist-with-r

Machine-learning-scientist-with-python

Machine-learning-for-everyone

Data-science-for-everyone

Data-engineer-with-python

Data-analyst-with-python

Big-data-fundamentals-via-pyspark

Building-recommendation-engines-in-python

Market-basket-analysis-in-python

Market-basket-analysis-in-r

Human-resources-analytics-exploring-employee-data-in-r

Recommendation-engines-in-pyspark

| Coming back to the topic -

1. LightFM

| Github

| Official Documentation

L*ightFM* is a *Python implementation of LightFM*, a *hybrid recommendation algorithm*.



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estimation) and produces high-quality results.

It also makes it possible to incorporate both item and user metadata into the *traditional matrix factorization algorithms*. It represents each user and item as the sum of the latent representations of their features, thus allowing *recommendations to generalize* to new things (*via article features*) and new users (*via user features*).

The details of the approach are described in the LightFM paper, available on [arXiv](#).

Trending AI Articles:

1. Write Your First AI Project in 15 Minutes

2. Generating neural speech synthesis voice acting using xVASynth

3. Top 5 Artificial Intelligence (AI) Trends for 2021

4. Why You're Using Spotify Wrong

2. Spotlight

Github

Official Documentation

Spotlight uses PyTorch to build both deep and shallow recommender models. By providing both a slew of building blocks for loss functions (various pointwise and pairwise ranking losses), representations (shallow factorization representations, deep sequence models), and utilities for fetching (or generating) recommendation datasets, it aims to be a tool for rapid exploration and prototyping of new recommender models.



Spotlight provides a range of models and utilities for fitting next item recommendation models, including

- *pooling models, as in [YouTube recommendations](#),*
- *LSTM models, as in [Session-based recommendations](#)..., and*
- *causal convolution models, as in [WaveNet](#).*

Spotlight offers a slew of popular datasets, including *Movielens 100K, 1M, 10M, and 20M*. It also incorporates utilities for creating synthetic datasets.

3. Implicit

| [Github](#)

Implicit is a *Fast Python Collaborative Filtering for Implicit Feedback Datasets*.

This project provides fast Python implementations of several different popular recommendation algorithms for implicit feedback datasets:

- *Alternating Least Squares as described in the papers [Collaborative Filtering for Implicit Feedback Datasets](#) and [Applications of the Conjugate Gradient Method for Implicit Feedback Collaborative Filtering](#).*
- *[Bayesian Personalized Ranking](#).*
- *[Logistic Matrix Factorization](#)*

- *Item-Item Nearest Neighbour models using Cosine, TFIDF, or BM25 as a distance metric.*

All models have *multi-threaded training routines, using Cython and OpenMP to fit the models in parallel among all available CPU cores*. In addition, the *ALS* and *BPR* models both have custom *CUDA kernels* – enabling fitting on compatible GPUs. Approximate nearest neighbours libraries such as [Annoy](#), [NMSLIB](#), and [Faiss](#) can also be used by Implicit to [speed up making recommendations](#).

4. Seldon Server

[Github](#)

[Official Documentation](#)

Seldon Server is a [Machine Learning Platform and Recommendation Engine built on Kubernetes](#).

It provides an *open-source data science stack* that runs within a [Kubernetes Cluster](#). You can use *Seldon* to deploy [machine learning](#) and *deep learning* *models* into production on-premise or in the cloud (e.g. [GCP](#), [AWS](#), [Azure](#)).

It includes an API with two key endpoints:

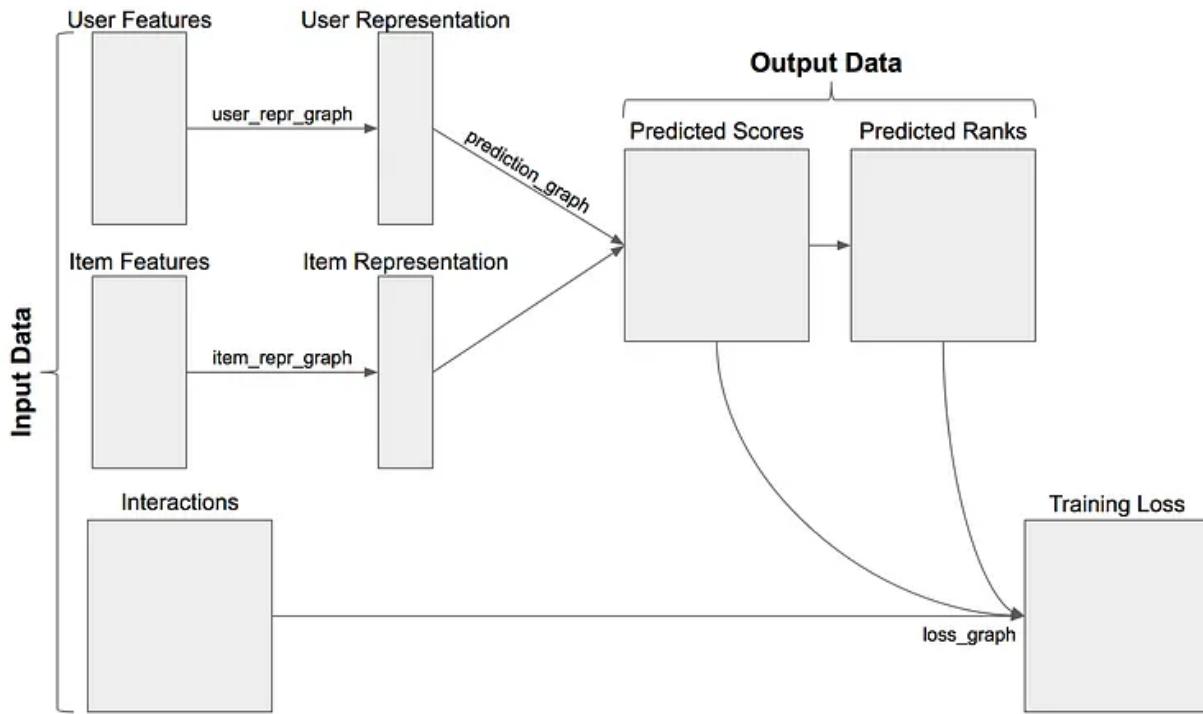
1. [Predict](#) – Build and deploy supervised [machine learning](#) models created in any [machine learning](#) library or framework at scale using containers and [microservices](#).
2. [Recommend](#) – High-performance user activity and content-based recommendation engine with various algorithms ready to run out of the

box.

5. Tensorrec

Github

Tensorrec is a *TensorFlow recommendation algorithm and framework in Python*.



TensorRec is a *Python recommendation system* that allows you to develop recommendation algorithms and customize them using TensorFlow quickly.

TensorRec lets you *customize your recommendation system's representation/embedding functions and loss functions, while TensorRec handles the data manipulation, scoring, and ranking to generate recommendations*.

A *TensorRec* system consumes three pieces of data: *user_features*, *item_features*, and *interactions*. It uses this data to learn to make and rank recommendations.

For more information, and for an outline of this project, please read [this blog post](#).

For an introduction to building recommender systems, please see [these slides](#).

If you enjoy reading this article, I am sure that we share similar interests and are/will be in similar industries. So let's connect via [LinkedIn](#) and [Github](#). Please do not hesitate to send a contact request!

Don't forget to give us yours  !

Python

Recommendation System

Machine Learning

Data Science

Artificial Intelligence



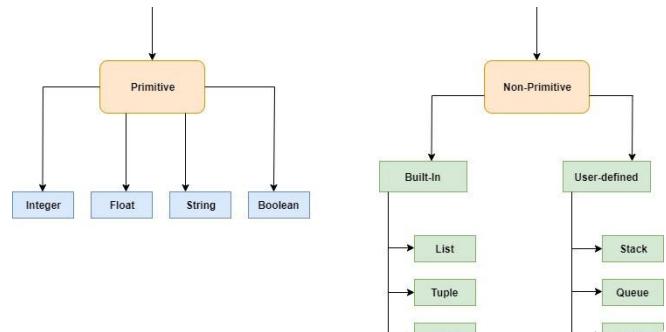
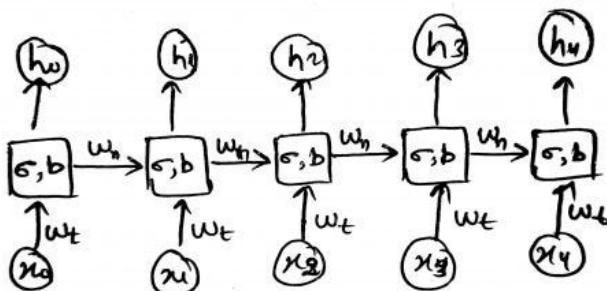
Written by Mrinal Walia

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I am a professional Python Developer specializing in Machine Learning, Artificial Intelligence, and Computer Vision with a hobby of writing blogs and articles.

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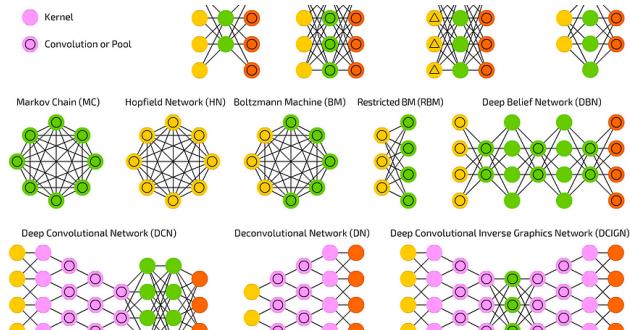
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