

Collaborative Recommendation Project

Table of contents

1. [Introduction](#)
2. [K-nearest neighbors algorithm for recommendation \(KNN\)](#)
 1. [Knn Model description](#)
 2. [Prediction with knn model](#)
 3. [Cross Validation for KNN](#)
3. [MultiDimensional functions classification \(MDC\)](#)
 1. [MDC Model Description](#)
 2. [SGD Classifier](#)
 3. [RandomForest Classifier](#)
 4. [Cross Validation for MDC](#)
4. [Comparison of algorithms](#)
5. [Conclusion](#)
6. [Somme references and links](#)

1. Introduction

In this work, we will build a system for finding people who share tastes and for making automatic recommendations bases on items that other people like. We will implement and compare two different algorithms for collaborative recommendation on real dataset: KNN and gradien descent. We splited the dataset into two parts for train set and test set. Then we build the model with the train set and predict the result of test set.

$$\text{SimCosine}(\vec{x}, \vec{y}) = \frac{\vec{x} \cdot \vec{y}}{\|\vec{x}\| \|\vec{y}\|}$$

2. K-nearest neighbors algorithm for recommendation (KNN)

2.1. Knn Model description

2.1. Prediction with knn model

2.1. Cross Validation for KNN

3. MultiDimensional functions classification (MDC)

3.1. MDC Model Description

3.2. SGD Classifier

3.3. RandomForest Classifier

3.4. Cross Validation for MDC

4. Comparation of algorithms

5. Conclusion

6. Somme references and links