Project Report: User-Job Suitability Measurement

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Abstract

Abstract here.

1 Introduction

2 Problem Formulation

if we assume that all job seekers are extremely knowledgeable (understand clearly and completely the profile and requirement of every job) and rational (never apply for the unsuitable jobs), we can directly makes use of the score obtained in the application prediction. However, such assumption receives little support from practical analysis, in the sense that people tend to apply for the job positions with higher salaries and correspongly much more capability seeking.

2.1 Suitability Measurement As Matrix Completion

2.1.1 Failure of traditional binary classifier

2.1.2 Content-based Filtering

2.1.3 Collaborative Filtering

Nearest neighbour method and latent factor model are two major models for Collaborative filtering.

2.1.4 Features-incorporated Matrix Completion

A recently emerging paper proposed an inductive matrix completion method, in which features of items are considered while completing matrices. According to [1], this feature incorporation method can be explained as a way to provide additional support for sparse matrices. From this perspective, we can see it as a new approach that incorporates advantages from both collaborative filtering and content-based filtering.

One possible enhancement for above inductive matrix completion is to extend the linear association between features and latent factors to an version that accepts non-linear association. Intuitively, we can name this approach as *kernel-based* inductive matrix completion. By considering non-linear relations between designed features and hidden topics (shared latent factors), the space of latent factors can be largely expanded and then it would be more likely to automatically detect latent factors with higher quality.

2.2 Suitability Measurement with Prerequisites

1. simulate course recommendaiton (by adita)

2.3

2.4

3 Experiments

3.1 Application Prediction

2. suitability problem

References

References

[1] Prateek Jain and Inderjit S. Dhillon. Provable inductive matrix completion. *CoRR*, abs/1306.0626, 2013.