Clustering Approach to detect Profile Injection Attacks in Recommender System

International Journal of Computer Applications
Foundation of Computer Science (FCS), NY, USA

Volume 166
Number 6

Year of Publication: 2017

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10.5120/ijca2017914031

Abstract

Recommender systems apply techniques of knowledge discovery for specific problem to make personalized recommendation of the products or services to the users. The huge growth in the information and the count of visitors to the web sites especially on e-commerce in last few years creates some challenges for recommender systems. E-commerce recommender systems are vulnerable to the profile injection attacks, involving insertion of fake profiles into the system to influence the recommendations made to the users. Prior work has shown that performance of system can be affected by even small number of biased profiles. In this paper, we show that unsupervised clustering approach can be used effectively for the detection of profile injection attacks in recommender system. Here we give a comparative study of four clustering algorithms and measure their performance.

References

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**Index Terms**

Computer Science  
Security

**Keywords**

Recommender system; collaborative filtering; attack detection; bias profile injection; performance measure; unsupervised approach.