Efektifitas Penggunaan Metode Autoencoder pada Recommender System Dalam Domain E-commerce

Jayana Citra Agung Pramu Putra[1], Z.K. Abdurahman Baizal[2]

[1,2]Fakultas Informatika, Universitas Telkom, Bandung

[1]jayanacitra@student.telkomuniversity.ac.id, [2]baizal@telkomuniversity.ac.id

Abstract

The growth of large data in the online market can cause problems for users, one of which is in finding products that are to their liking. Recommender systems can overcome this problem by providing specific product recommendations to be promoted and offered to buyers, for example with Collaborative Filtering. The Collaborative Filtering Paradigm consists of Memory-based and Model-based techniques. Model-based techniques are considered to be able to complement the shortcomings of memory-based because of their high scalability, accuracy, and reduced dimensions. The type of model-based that is best known for having good results is Singular Value Decomposition (SVD) and what has been frequently used recently is deep learning, especially Autoencoder. The both models are very popular for use in dimension reduction so they are suitable for making recommendations. The advantage of Deep Learning is this method can be done without preprocessing so it can minimize the process that must be done. The evaluation results show that the errors produced by SVD and Autoencoder are lower compared to other studies. RMSE is 0.7 and MAE is 0.5. Even though the RMSE and MAE on the Autoencoder are greater than the SVD, the results of the T-Test show that there is no significant difference in the two error results. Autoencoders have been shown to have good results without preprocessing and are more effective with shorter processes and there are no significant differences with SVDs. Thus, Autoencoder can be said to be worthy of use and more effective in giving recommendations.

Keywords: ***Recommender System; Singular Value Decomposition; Collaborative Filtering; Model-Based; Autoencoder***