

ABSTRACT

E-commerce is a platform that allows interaction between sellers and buyers online. Nowadays, more and more users have switched from conventional shopping system to online system. The more e-commerce users, the more accurate system is needed in recommending items. Therefore, implementing a Click-Through Rate (CTR) system is an appropriate and implementable way to measure the ratio of user clicks. In implementing CTR, there are several algorithms that can be used, one of which is Deep Interest Network (DIN) that utilizes attention mechanism. The purpose of applying the DIN algorithm is to overcome the problem of inaccurate recommendation systems that are not only based on preferred products, but recommend items that match the categories in the user's behavior history. This method works very well by utilizing the attention mechanism which is the main component in the DIN model. The DIN model is evaluated using LogLoss, AUC, and RelImpr metrics. In the implementation, the performance using two activation variations of the DIN model is better than the DeepFM and Baseline models. DICE activation has an AUC of 0.7324 and LogLoss of 0.1834. While PReLU performed better than DICE with an AUC of 0.7328 and LogLoss of 0.1831. The performance improvement of DIN PReLU and DICE when compared to the Baseline model based on RelImpr is 6.08% and 6.03% respectively

Keywords: deep interest network, e-commerce, click-through rate, recommendation system, user behavior.