NEURAL HYPER LATENT FEATURES BASED COLLOBORATIVE FILTERING

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A dissertation submitted in partial fulfillment for
the requirement for the degree of MSc in Big Data Analytics

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in Collaboration with
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2021

Abstract

Recommendation systems are playing a vital role in modern-day e-commerce applications. Market surveys suggest that e-commerce applications revenue is mainly determined by personalized recommendations which are targeted at each personal preference level. These recommendation systems are mainly coming under three different algorithmic approaches Content-based filtering, Collaborative filtering, and Knowledge base systems. Each algorithm has its upside and downsides under different circumstances. However, all are subject to three main problems in different levels as Sparsity, Scalability and Cold-start problems. In this research two types of algorithms are combined to develop a Deep Learning based Hybrid filtering algorithm which is synergized by both collaborative filtering and content-based filtering approaches. In this case, the research tries to utilize deep learning to train a model based on user ratings and community ratings and find out further set of hyper latent features which are extracted based on supported image contents for each product. In this way, this algorithm can predict recommendations for new users on existing product based on their initial preferences without waiting until they rate anything on the product catalogue which in turns solve the cold-start problem for new users.