

Unsupervised Generative AI Methodology to Empower the Recommendation Diversity based on Library 4.0

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Abstract. In the innovative era of Information Technology, the sustaining development of machine learning positively enhances Artificial Intelligence (AI) applications addressing the highly complicated problems in the real world. On the basis of Library 4.0, the library services aim to carry out more convenience brought by the so-called “smart library” that effectively analyses massive information and provides intelligent services, and the generative AI technology can be recognized as a promising tool to refine the diversity of Library 4.0 in the upcoming future. In the library, there are various forms of data, including bibliographic data, readers' data, and the interactive information between library and readers, etc. However, these complicated data limit the recommendation potential of library services, and most generative AI techniques are designed based on supervised learning. To satisfy the diversified requirements of smart library, this work proposes a concept of reinforcing the recommendation diversity based on Library 4.0, and the proposed framework is developed based on unsupervised learning. In addition, the recommendation system based on library data is designed to facilitate generative AI technology for Library 4.0, and the expected library function can adaptively provide reliable recommendation information to librarians and readers.