

A survey of autoencoder-based recommender systems

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Problems & Ideas

- **Problems:** At present, deep learning has been widely used in recommender systems. As an effective deep learning method, autoencoder is widely used in recommender systems. However, there is no review on the autoencoder-based recommender systems (RSs).
- **ideas:** As a review article, this paper classifies and summarizes the currently works on autoencoder-based recommender systems. Figure 1 shows our classification framework for autoencoder-based recommender systems.

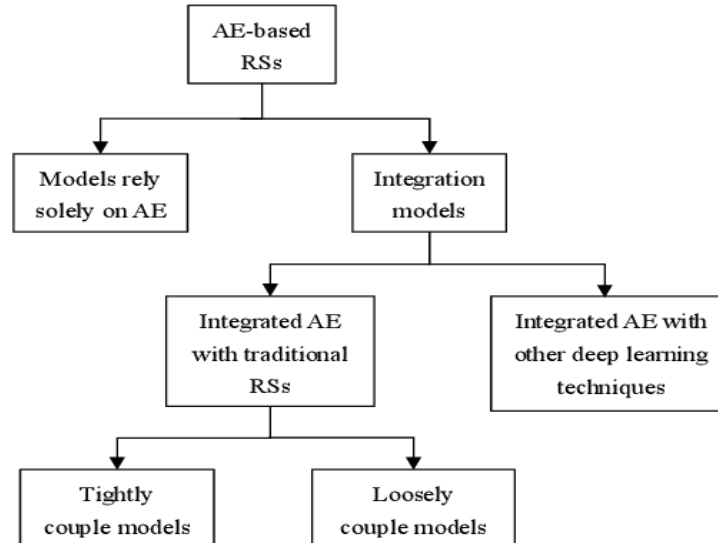


Figure 1: The classification framework of autoencoder-based recommender systems

Main Contributions

In this paper, we conduct a systematic review on AE-based recommender systems. Particularly, we propose a classification scheme to classify current related works and highlight the main prototypes of AE-based RSs as well as summarize the advantages and disadvantages of each. At last, we discuss future research directions in AE-based recommender systems. Figure 2 shows the classification of shortlisted publications according to the proposed classification framework.

Models rely solely on AE	Integration models		
	Integrate AE with traditional Rss <i>Tightly coupled models</i>	<i>Loosely coupled models</i>	Integrate AE with other deep learning techniques
[47], [50], [53], [54], [56], [58], [59], [61], [62], [119], [120], [121], [122], [123]	[83], [84], [85], [88], [91], [92], [93], [94], [98], [124], [125], [126], [127]	[99], [104], [105], [108], [128], [129], [130], [131], [132], [133]	[110], [112], [115], [117], [118]

Figure 2: Classification of shortlisted publications