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 reviw 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.
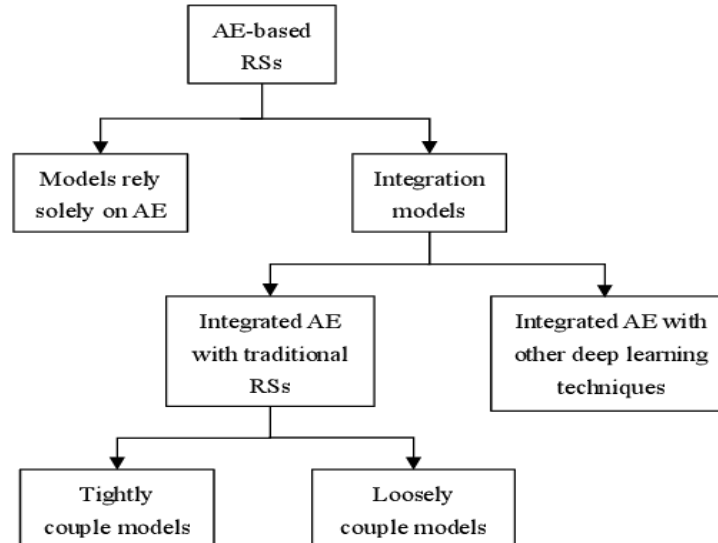

Figure 1: The classification framework of autoencoder-based recommender systems

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 other deep learning techniques
	Integrate AE with traditional Rss		
	Tightly coupled models	*Loosely coupled models*	
[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