





















## REFERENCES

- [1] Charu C Aggarwal. 2016. Content-based recommender systems. In *Recommender systems*. Springer, 139–166.
- [2] Trapit Bansal, David Belanger, and Andrew McCallum. 2016. Ask the gru: Multi-task learning for deep text recommendations. In *Proceedings of the 10th ACM Conference on Recommender Systems*. ACM, 107–114.
- [3] Brett K Beaulieu-Jones and Jason H Moore. 2017. Missing data imputation in the electronic health record using deeply learned autoencoders. In *Pacific Symposium on Biocomputing 2017*. World Scientific, 207–218.
- [4] Alex Beutel, Paul Covington, Sagar Jain, Can Xu, Jia Li, Vince Gatto, and Ed H Chi. 2018. Latent cross: Making use of context in recurrent recommender systems. In *Proceedings of the 11th ACM International Conference on Web Search and Data Mining*. ACM, 46–54.
- [5] Alexander Binder, Sebastian Bach, Gregoire Montavon, Klaus-Robert Müller, and Wojciech Samek. 2016. Layer-wise relevance propagation for deep neural network architectures. In *Information Science and Applications (ICISA) 2016*. Springer, 913–922.
- [6] Xu Chen, Hongteng Xu, Yongfeng Zhang, Jiayi Tang, Yixin Cao, Zheng Qin, and Hongyuan Zha. 2018. Sequential recommendation with user memory networks. In *Proceedings of the 11th ACM International Conference on Web Search and Data Mining*. ACM, 108–116.
- [7] Heng-Tze Cheng, Levent Koc, Jeremiah Harmsen, Tal Shaked, Tushar Chandra, Hrishikesh Aradhye, Glen Anderson, Greg Corrado, Wei Chai, Mustafa Ispir, et al. 2016. Wide & deep learning for recommender systems. In *Proceedings of the 1st workshop on deep learning for recommender systems*. ACM, 7–10.
- [8] Mukund Deshpande and George Karypis. 2004. Item-based top-n recommendation algorithms. *ACM Transactions on Information Systems (TOIS)* 22, 1 (2004), 143–177.
- [9] John Duchi, Elad Hazan, and Yoram Singer. 2011. Adaptive Subgradient Methods for Online Learning and Stochastic Optimization. *The Journal of Machine Learning Research* 12 (2011), 2121–2159.
- [10] Michael D Ekstrand, John T Riedl, and Joseph A Konstan. 2011. Collaborative Filtering Recommender Systems. *Foundations and Trends in Human-Computer Interaction* 4, 2 (2011), 81–173.
- [11] Ruining He and Julian McAuley. 2016. Ups and downs: Modeling the visual evolution of fashion trends with one-class collaborative filtering. In *proceedings of the 25th international conference on world wide web*. International World Wide Web Conferences Steering Committee, 507–517.
- [12] Ruining He and Julian McAuley. 2016. VBPR: visual Bayesian Personalized Ranking from implicit feedback. In *Proceedings of the 30th AAAI Conference on Artificial Intelligence*. AAAI Press, 144–150.
- [13] Xiangnan He and Tat-Seng Chua. 2017. Neural factorization machines for sparse predictive analytics. In *Proceedings of the 40th International ACM SIGIR conference on Research and Development in Information Retrieval*. ACM, 355–364.
- [14] Xiangnan He, Lizi Liao, Hanwang Zhang, Liqiang Nie, Xia Hu, and Tat-Seng Chua. 2017. Neural collaborative filtering. In *Proceedings of the 26th International Conference on World Wide Web*. International World Wide Web Conferences Steering Committee, 173–182.
- [15] Anvitha Hegde and Savitha K Shetty. 2015. Collaborative filtering recommender system. *Int J Emerg Trends Sci Technol* 2, 07 (2015), 291–324.
- [16] José Miguel Hernández-Lobato, Neil Houlsby, and Zoubin Ghahramani. 2014. Probabilistic matrix factorization with non-random missing data. In *Proceedings of the 31st International Conference on International Conference on Machine Learning—Volume 32*. JMLR. org, II–1512.
- [17] Balázs Hidasi and Alexandros Karatzoglou. 2018. Recurrent neural networks with top-k gains for session-based recommendations. In *Proceedings of the 27th ACM International Conference on Information and Knowledge Management*. ACM, 843–852.
- [18] Balázs Hidasi, Alexandros Karatzoglou, Linas Baltrunas, and Domonkos Tikk. 2015. Session-based recommendations with recurrent neural networks. *arXiv preprint arXiv:1511.06939* (2015).
- [19] Balázs Hidasi, Massimo Quadrana, Alexandros Karatzoglou, and Domonkos Tikk. 2016. Parallel recurrent neural network architectures for feature-rich session-based recommendations. In *Proceedings of the 10th ACM Conference on Recommender Systems*. ACM, 241–248.
- [20] Jin Huang, Wayne Xin Zhao, Hongjian Dou, Ji-Rong Wen, and Edward Y Chang. 2018. Improving sequential recommendation with knowledge-enhanced memory networks. In *The 41st International ACM SIGIR Conference on Research & Development in Information Retrieval*. ACM, 505–514.
- [21] Sergey Ioffe and Christian Szegedy. 2015. Batch normalization: accelerating deep network training by reducing internal covariate shift. In *Proceedings of the 32nd International Conference on International Conference on Machine Learning—Volume 37*. JMLR. org, 448–456.
- [22] Joseph A Konstan, Bradley N Miller, David Maltz, Jonathan L Herlocker, Lee R Gordon, and John Riedl. 1997. GroupLens: applying collaborative filtering to Usenet news. *Commun. ACM* 40, 3 (1997), 77–87.
- [23] Yehuda Koren. 2008. Factorization meets the neighborhood: a multifaceted collaborative filtering model. In *Proceedings of the 14th ACM SIGKDD international conference on Knowledge discovery and data mining*. ACM, 426–434.
- [24] Yehuda Koren, Robert Bell, and Chris Volinsky. 2009. Matrix factorization techniques for recommender systems. *Computer* 8 (2009), 30–37.
- [25] Piji Li, Zihao Wang, Zhaochun Ren, Lidong Bing, and Wai Lam. 2017. Neural rating regression with abstractive tips generation for recommendation. In *Proceedings of the 40th International ACM SIGIR conference on Research and Development in Information Retrieval*. ACM, 345–354.
- [26] Sheng Li, Jaya Kawale, and Yun Fu. 2015. Deep collaborative filtering via marginalized denoising auto-encoder. In *Proceedings of the 24th ACM International Conference on Information and Knowledge Management*. ACM, 811–820.
- [27] Xiaopeng Li and James She. 2017. Collaborative variational autoencoder for recommender systems. In *Proceedings of the 23rd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*. ACM, 305–314.
- [28] Benjamin M Marlin and Richard S Zemel. 2009. Collaborative prediction and ranking with non-random missing data. In *Proceedings of the 3rd ACM conference on Recommender systems*. ACM, 5–12.
- [29] Rulin Pan, Tingsheng Yang, Jianhua Cao, Ke Lu, and Zhanchao Zhang. 2015. Missing data imputation by K nearest neighbours based on grey relational structure and mutual information. *Applied Intelligence* 43, 3 (2015), 614–632.
- [30] Steffen Rendle. 2010. Factorization machines. In *2010 IEEE International Conference on Data Mining*. IEEE, 995–1000.
- [31] Steffen Rendle. 2012. Factorization machines with libfm. *ACM Transactions on Intelligent Systems and Technology (TIST)* 3, 3 (2012), 57.
- [32] Shaoyun Shi, Min Zhang, Yiqun Liu, and Shaoping Ma. 2018. Attention-based Adaptive Model to Unify Warm and Cold Starts Recommendation. In *Proceedings of the 27th ACM International Conference on Information and Knowledge Management*. ACM, 127–136.
- [33] Manasi Vartak, Arvind Thiagarajan, Conrado Miranda, Jeshua Bratman, and Hugo Larochelle. 2017. A meta-learning perspective on cold-start recommendations for items. In *Proceedings of the 31st International Conference on Neural Information Processing Systems*. Curran Associates Inc., 6907–6917.
- [34] Maksims Volkovs, Guangwei Yu, and Tomi Poutanen. 2017. DropoutNet: addressing cold start in recommender systems. In *Proceedings of the 31st International Conference on Neural Information Processing Systems*. Curran Associates Inc., 4964–4973.
- [35] Jian Wei, Jianhua He, Kai Chen, Yi Zhou, and Zuoyin Tang. 2016. Collaborative filtering and deep learning based hybrid recommendation for cold start problem. In *Dependable, Autonomic and Secure Computing, 14th Intl Conf on Pervasive Intelligence and Computing, 2nd Intl Conf on Big Data Intelligence and Computing and Cyber Science and Technology Congress (DASC/PiCom/DataCom/CyberSciTech), 2016 IEEE 14th Intl C. IEEE*, 874–877.
- [36] Jian Wei, Jianhua He, Kai Chen, Yi Zhou, and Zuoyin Tang. 2017. Collaborative filtering and deep learning based recommendation system for cold start items. *Expert Systems with Applications* 69 (2017), 29–39.
- [37] Yongfeng Zhang, Qingyao Ai, Xu Chen, and W Bruce Croft. 2017. Joint representation learning for top-n recommendation with heterogeneous information sources. In *Proceedings of the 2017 ACM on Conference on Information and Knowledge Management*. ACM, 1449–1458.
- [38] Lei Zheng, Vahid Noroozi, and Philip S Yu. 2017. Joint deep modeling of users and items using reviews for recommendation. In *Proceedings of the 10th ACM International Conference on Web Search and Data Mining*. ACM, 425–434.