References

[1] S.-O. Daunfeldt, N. Rudholm, H. Sporre *et al.*, "Effects of brand-fit music on consumer behavior: A field experiment," HUI Research, Tech. Rep., 2017.

[2] Y.-H. Yang and J.-Y. Liu, "Quantitative study of music listening behavior in a social and affective context," *IEEE Transactions on Multimedia*, vol. 15, no. 6, pp. 1304–1315, 2013.

[3] E. Benetos, S. Dixon, Z. Duan, and S. Ewert, "Automatic music transcription: An overview," *IEEE Signal Processing Magazine*, vol. 36, no. 1, pp. 20–30, 2018.

[4] D. E. Hall, *Musical acoustics*. Brooks/Cole Publishing Company, 1991.

[5] A. Wang *et al.*, "An industrial strength audio search algorithm." in *Ismir*, vol. 2003. Citeseer, 2003, pp. 7–13.

[6] L. Muda, M. Begam, and I. Elamvazuthi, "Voice recognition algorithms using mel frequency cepstral coefficient (mfcc) and dynamic time warping (dtw) techniques," *arXiv preprint arXiv:1003.4083*, 2010.

[7] M. Müller, *Fundamentals of music processing: Audio, analysis, algorithms, applications*. Springer, 2015.

[8] K. Choi, G. Fazekas, M. Sandler, and K. Cho, "Convolutional recurrent neural networks for music classification," in *2017 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP)*. IEEE, 2017, pp. 2392–2396.

[9] ——, "Transfer learning for music classification and regression tasks," *arXiv preprint arXiv:1703.09179*, 2017.

[10] J. Pons and X. Serra, "musicnn: Pre-trained convolutional neural networks for music audio tagging," *arXiv preprint arXiv:1909.06654*, 2019.

[11] H. Zamani, M. Schedl, P. Lamere, and C.-W. Chen, "An analysis of approaches taken in the acm recsys challenge 2018 for automatic music playlist continuation," *ACM Transactions on Intelligent Systems and Technology (TIST)*, vol. 10, no. 5, pp. 1–21, 2019.

[12] R. Burke, "Hybrid recommender systems: Survey and experiments," *User modeling and user-adapted interaction*, vol. 12, no. 4, pp. 331–370, 2002.

[13] X. He, L. Liao, H. Zhang, L. Nie, X. Hu, and T.-S. Chua, "Neural collaborative filtering," in *Proceedings of the 26th international conference on world wide web*, 2017, pp. 173–182.

[14] J. S. Breese, D. Heckerman, and C. Kadie, "Empirical analysis of predictive algorithms for collaborative filtering," *arXiv preprint arXiv:1301.7363*, 2013.

[15] A. Van Den Oord, S. Dieleman, and B. Schrauwen, "Deep content-based music recommendation," in *Neural Information Processing Systems Conference (NIPS 2013)*, vol. 26. Neural Information Processing Systems Foundation (NIPS), 2013.

[16] G. Bonnin and D. Jannach, "Automated generation of music playlists: Survey and experiments," *ACM Computing Surveys (CSUR)*, vol. 47, no. 2, pp. 1–35, 2014.

[17] N. Tintarev, C. Lofi, and C. C. Liem, "Sequences of diverse song recommendations: An exploratory study in a commercial system," in *Proceedings of the 25th Conference on User Modeling, Adaptation and Personalization*, 2017, pp. 391–392.

[18] M. Pichl, E. Zangerle, and G. Specht, "Towards a context-aware music recommendation approach: What is hidden in the playlist name?" in *2015 IEEE International Conference on Data Mining Workshop (ICDMW)*, 2015. doi: 10.1109/ICDMW.2015.145 pp. 1360–1365.

[19] C.-W. Chen, P. Lamere, M. Schedl, and H. Zamani, "Recsys challenge 2018: Automatic music playlist continuation," in *Proceedings of the 12th ACM Conference on Recommender Systems*, 2018, pp. 527–528.

[20] A. Vall, M. Dorfer, H. Eghbal-Zadeh, M. Schedl, K. Burjorjee, and G. Widmer, "Feature-combination hybrid recommender systems for automated music playlist continuation," *User Modeling and User-Adapted Interaction*, vol. 29, no. 2, pp. 527–572, 2019.

[21] L. Barrington, R. Oda, and G. R. Lanckriet, "Smarter than genius? human evaluation of music recommender systems." in *ISMIR*, vol. 9. Citeseer, 2009, pp. 357–362.

[22] M. Kaminskas and D. Bridge, "Diversity, serendipity, novelty, and coverage: a survey and empirical analysis of beyond-accuracy objectives in recommender systems," *ACM Transactions on Interactive Intelligent Systems (TiiS)*, vol. 7, no. 1, pp. 1–42, 2016.

[23] M. Abadi, A. Agarwal, P. Barham *et al.*, "TensorFlow: Large-scale machine learning on heterogeneous systems," 2015, software available from tensorflow.org. [Online]. Available: https://www.tensorflow.org/

[24] F. Pedregosa, G. Varoquaux, A. Gramfort *et al.*, "Scikit-learn: Machine learning in Python," *Journal of Machine Learning Research*, vol. 12, pp. 2825–2830, 2011.

[25] "Information and documentation — International Standard Recording Code (ISRC)," International Organization for Standardization, Standard ISO 3901:2019, Feb. 2019.

[26] "Hyperparameter tuning in Cloud Machine Learning Engine using Bayesian Optimization," https://cloud.google.com/blog/products/ai-machine-learning/hyperparameter-tuning-cloud-machine-learning-engine-using-bayesian-optimization, accessed: 2021-05-20.

[27] A. Holzapfel, B. Sturm, and M. Coeckelbergh, "Ethical dimensions of music information retrieval technology," *Transactions of the International Society for Music Information Retrieval*, vol. 1, no. 1, pp. 44–55, 2018.

[28] D. Harwell, "iHeartMedia laid off hundreds of radio DJs. Executives blame AI. DJs blame the executives." January 2020. [Online]. Available: https://www.washingtonpost.com/technology/2020/01/31/iheartmedia-radio-artificial-intelligence-djs/

[29] K. Tsukuda, S. Fukayama, and M. Goto, "Listener anonymizer: Camouflaging play logs to preserve user's demographic anonymity." in *ISMIR*, 2018, pp. 687–694.

Appendix A

Estimated results for a random recommender system

For simulating the results for a system recommending random tracks from the catalog, the following numbers were used:

- Number of relevant tracks per playlist: 30
  (the average playlist had ~100 tracks, and 30% of them were in the hidden section of the playlist).
- Number of playlists: 9000 (the number of test set playlists)
- Number of iterations: 100 (how many times the simulation was run per k)

Following is the source code for the simulation, and the average *recall@10*, *precision@10*, *recall@500*, and *precision@500* for the simulated random recommender.