TEMPORAL GRAPHS FOR MUSIC RECOMMENDATION SYSTEMS

MOTIVATION

“Nearly 616.2 million people listen to their favorite artists or discover new ones via online streaming platforms" [1]. Hence, streaming platforms seek to increase enhance the user experience by offering personalized music recommendations. At the same time, music streaming services are able to track individual preferences meticulously, thus, a growing volume of data on multiple user’s musical preferences is available. In response, we aimed to develop a recommendation model that predicts the genres a user is expected to like.

DATASETS

We worked with a temporal evolving graph from Temporal Graph Benchmark (TGB) [2] datasets. TGB provides two data sets: First, a graph with 1000 users and 500 music genres represented as nodes and weighted edges that indicates a user listens to a music genre at a given time. The temporal graph evolves over the span of 4 years. The dataset posed a challenge since the description given by the creators of the dataset did not match it. Additionally, it has anomalies and multiple duplicates. A second dataset derives from the first, a dynamical matrix of users and genres where the interaction of each user and each genre is normalized over the span of a week. We train our models on this second dataset. Nevertheless, we explore the first dataset to comprehend the second one.

APPROACH

Our primary goal is to predict the the interaction of each user and each genre on the following week. We begin by ...

RESULTS

CONCLUSION

[1] Götting M. “Music streaming worldwide - statistics & facts". 10 Jan 2024, https://www.statista.com/topics/6408/music-streaming/#topicOverview Accessed May 28, 2024.

[2] Huang, S., et al. “Temporal graph benchmark for machine learning on temporal graphs.” *Advances in Neural Information Processing Systems*, 2023. Preprint: arXiv:2307.01026, 2023.