

Evan Griswold
Earlham College, Computer Science

Abstract

This project focuses on developing an AI-powered music recommendation system by harnessing diverse music data sources with the main dataset Million Song Dataset (MSD) and having sub-datasets within MSD involving cover songs, lyrics, user data, genre labels, and similarity. Employing content based filtering and deep learning together will achieve the best results, providing users with personalized and diverse music recommendations. The objective is to create an efficient music recommendation system that enhances user music discovery and satisfaction.

Methods

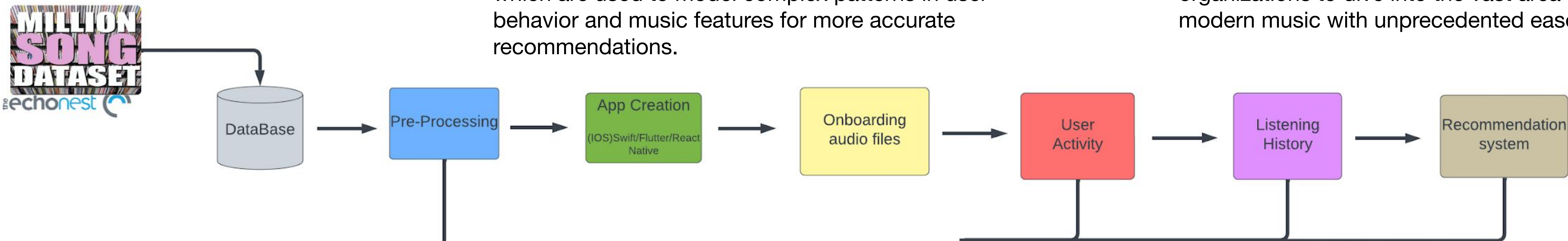
There are numerous methods to achieve the task at hand, however, the proposal will only focus on Content Based Filtering and Deep Learning. These methods will be essential for the work at hand to produce the AI music recommendation system. The choice of method depends on the specific goals of the music recommendation system and the nature of the available data. These methods will achieve the best results, providing users with personalized and diverse music recommendations.

Content based filtering recommends music based on the content attributes of songs and the user’s historical preferences. It focuses on matching user profiles with music features like genre, tempo, and lyrics.

Deep learning is using a neural network with several layers. These include deep recommendation models, which are used to model complex patterns in user behavior and music features for more accurate recommendations.

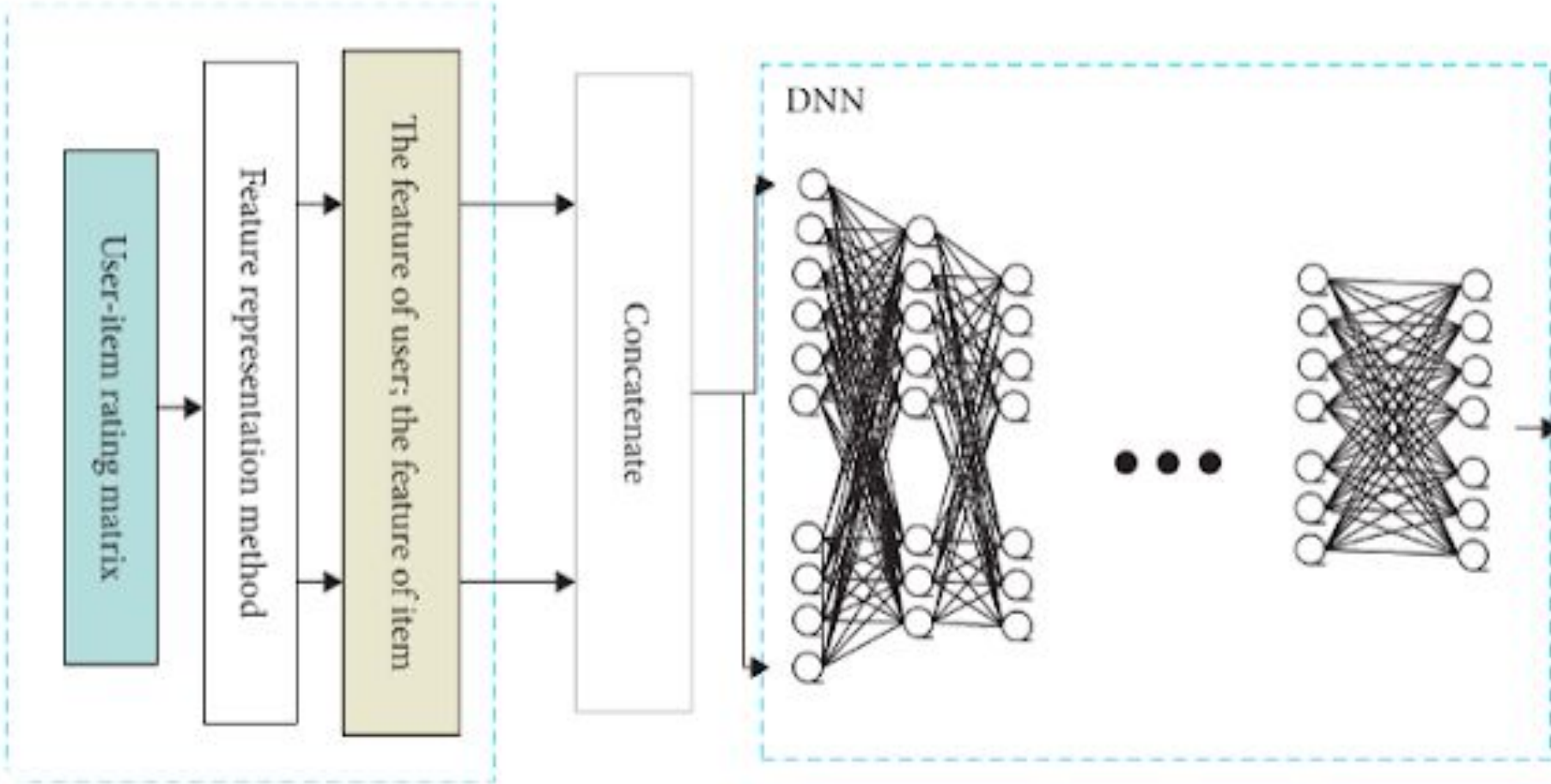
Datasets

The Million Song Dataset is a valuable resource comprising detailed audio features and metadata for over a million contemporary popular music tracks. Provided by The Echo Nest, the dataset offers researchers and enthusiasts access to a wealth of information without the burden of managing actual audio files. Instead, it focuses solely on derived features, making it easier to explore and analyze various aspects of music, from tempo and key to time signature and more. This accessible collection serves as a foundational tool for diverse applications, including music recommendation systems and academic research in fields like machine learning. Its open availability encourages collaboration and innovation, enabling individuals and organizations to dive into the vast area of modern music with unprecedented ease.



Results

N/A...Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Rhoncus dolor purus non enim praesent elementum facilisis. Lectus quam id leo in vitae turpis massa. Nibh cras pulvinar mattis nunc sed. Senectus et netus et malesuada fames. Cursus metus aliquam eleifend mi in nulla. Urna condimentum mattis pellentesque id. Sed risus ultricies tristique nulla aliquet enim tortor at auctor. Nibh venenatis cras sed felis eget velit aliquet. Morbi leo urna molestie at. Ac tortor dignissim convallis aenean et. At consectetur lorem donec massa.



Future Work

Upon achieving satisfactory performance, the recommendation algorithm is seamlessly incorporated into a user-friendly platform with an intuitive interface. This interface becomes the conduit through which users interact with the system, fostering an engaging and efficient music discovery experience. Moreover, provisions are made for feedback collection, ensuring continuous improvement and adaptability to evolving user preferences. Crucially, the ethical dimensions of user data handling and privacy concerns are addressed with utmost diligence. Stringent measures are implemented to safeguard user data, affirming a commitment to data security and user privacy throughout the system's life cycle.

