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| Title | Bmnet-5: A novel approach of neural network to classify the genre of bengali music based on audio features | | |
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| Abstract |  |
| Music genre classification (MGC) is the process of putting genre labels on music by analyzing the sounds or words. With the rapid growth of music data repositories, MGC can be used in a lot of ways to organize and manage music recommendation systems, advertising, and streaming services. But there have been a lot of works on classifying English music using different statistical and machine learning methods, but there hasn’t been much progress in classifying Bengali music. Also, Deep Learning (DL) methods have been used in a few important ways to classify different types of music. The content and uniqueness of Bengali music make it much more interesting. Also, there is still a lot to learn about how to use the DL approach in Bengali music. So, Bengali music genre classification is a pretty new area of research in the field of Deep Learning. In this paper, we developed a unique technique called BMNet-5 to perform a multiclass classification of Bangla music genres such as “Bangla Adhunik,” “Bangla Hip-Hop,” “Bangla Band Music,” “Nazrulgeeti,” “Palligeeti,” and “Rabindra Sangeet.” We show the effectiveness of the suggested technique by extracting features from a dataset of 1742 Bangla music pieces and evaluating the automated classification judgments. The proposed BMNet-5 is based on a neural network designed to predict music genre from audio inputs. Our suggested model outperformed the corresponding previous research with an accuracy of 90.32%. The BMNet-5 model is then tested for performance consistency using K-fold cross validation with varying k values. Finally, we use the suggested model to train the interpretable SHAP model for all the genre of the Bangla music dataset, and the development of an explainable outcome may have a significant advantage. | |