**Introduction:**

The subject of music genre classification has been widely researched in music information retrieval to categorize a vast amount of music data. This is vital for various applications such as music recommendation systems, music library organization, and music analysis.

**Problem Domain and Motivation:**

Despite the significant progress in music genre classification, attaining high accuracy levels remains elusive. One problem comes from the fact that existing approaches often fail to recognize the details tied to different types of musical genres thus causing misclassifications.

**Research Gap and Proposed Approach:**

Shallow neural networks with a smaller number of layers are one of the limitations of traditional methods. To fill this gap, the existing technique should be modified by adding more layers to create deeper neural networks and using different activation functions. The main aim is therefore increasing depth leading to better learning ability within the model itself resulting in capturing complex features hence enhancing the accuracy of classifying music genres.

**Implementation Details:**

The implementation utilized a dataset having 10 music genres, each genre consisting of 1,000 audio files lasting for 30 seconds. To maximize the information, we can split this audio into 10 separate chunks with three seconds each.

The deep learning model incorporates an architecture of convolutional neuronal networks (CNNs) with multiple dense and dropout layers followed by fully connected layers. Different activation functions such as Adam, SGD and RMSprop are used to tune the model’s performance.

**Evaluation and Results:**

To assess the effectiveness of the implemented model, I utilized some metrics like accuracy, precision, and recall. In other words, these results demonstrate that incorporating deeper architectures as well as different activation functions substantially increased the accuracy compared to the original method.

**Conclusion and Future Work:**

I have addressed the limitations of shallow neural network architectures in music genre classification by proposing a deep CNN model with different activation functions. The increase in depth together with diverse activation functions assists in capturing better intrinsic features that could enhance genre classification accuracy.

Though the first results are promising, there is a need for further research on the best model architecture, hyperparameter tuning and alternative pre-processing techniques. Similarly, adding attention mechanisms or using transfer learning could help improve the performance and generalization of the model.