# Audio Classification using deep learning

Audio plays a crucial part in our lives, from identifying a disastrous major like identifying a predator nearby or a disease to being motivated by music. Eventually, audio classifier development is a critical activity in our life. It is essential to categorize audio' sources and already broadly implemented for several aims as Deep Learning has become one of the most popular technologies for solving many problems including audio classification. In harmony, there are several ways for classifying the genre of music. In the audio domain, Deep Learning has demonstrated outstanding performance by successfully detecting various target class patterns in time-series data like audios, with the environment being essential because batches of other sounds, also known as noises, can be created that can interfere with the data (Kim, et al., 2020). Here, two papers on two different applications will be debated.

With regards to disastrous majors, (Taneja, et al., 2020) came up with a work that made a discovery by presenting a method for classifying cardiac/heart audio samples using state-of-the-art deep learning algorithms. Cardiovascular diseases have long been a leading cause of death globally. In 2004, 17.1 million deaths attributable to cardiovascular disease (CVD) were documented, accounting for 29 percent of all deaths worldwide. Myocardial heart disease was responsible for about 7.2 million of these instances. As a result, every method that might aid in the early detection of heart disease is critical in improving this rising score. The authors were successful in the work, with precision values of 1 for artifact, 0.906 for normal, and 0.859 for murmur category used to report model performance.

On the other hand, (Jawaherlalnehru & Jothilakshmi, 2018) invested their time in a very different major like music by developing a Deep Neural Network for the automatic classification of musical genres. Music, songs, and videos exist on the internet, and the number continues to rise. The analysis and indexing of large-scale music files is dependent on automated techniques. As a result, automatically extracting music metadata is becoming more popular as a method of organizing and structuring music files.

Finally, technically, shortly and simply put, there are several articles on how to handle audio data, as well as how to input sound data, including how to convert it to a spectrogram format and why it is important. As a result, it is critical to understand not just how to design deep learning architecture to represent data, but also how to train the model.