Creating a Multi-functional Algorithm for Audio Steganography

Campbell, DeMarcus

Audio steganography is the embedding of data into an audio file. Current research in audio steganography has only shown that audio and image files can be used as the embedded media. For this project, a Java program was written that allows for any type of file to be the embedded media within an audio file. The research that was needed for this program to be written was conducted using the Java Media Composition Library written at Georgia Institute of Technology and the jGrasp programming environment. The project was conducted with the goal to create an algorithm for audio steganography that would allow for multiple types of files to be embedded in an audio file and to construct a method of embedding data into the slopes of the sound wave in areas of high frequency. The process by which the research was conducted consisted of constructing a test class, constructing an abstract class, modifying the abstract class, and finally testing for the detection of changes within the sound file. It was discovered that by embedding the data linearly along the slopes of the sound wave, one could not detect the changes that were made to the sound file. It was then concluded that by using this Java program instead of the commonly used Least Significant Bit methodology the data could be embedded more efficiently by analyzing the cover file and using the areas determined to have high wave frequency as the cover area.

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