INFORMATICS INSTITUTE OF TECHNOLOGY

In Collaboration with

UNIVERSITY OF WESTMINSTER

Harmful Construction Noise Identification using Deep Learning Approach

Final Report

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May/2023

ABSTRACT

Construction noise is one of the most common occupational hazards in the construction industry. It can cause permanent hearing loss, tinnitus, and other health problems. In this thesis, propose a deep learning approach for harmful construction noise identification to provide a solution to this problem. The proposed system is a web application that can identify construction noises and classify them into different noise categories. The system is designed using convolutional neural networks (CNNs), a popular deep-learning technique for sound classification. The proposed system was trained and evaluated using a dataset of construction noises. The dataset was preprocessed and transformed into spectrograms using the Short-Time Fourier Transform (STFT) technique. The CNN model was trained on the transformed dataset and achieved a classification accuracy of over 73%. The proposed system has significant implications for the construction industry as it provides a cost-effective solution for identifying and monitoring harmful construction noises. The system can be used by safety managers, workers, and policymakers to promote a safer and healthier work environment. The results of this research demonstrate the potential of deep learning approaches for solving occupational safety and health problems in the construction industry.

Subject Descriptors – Audio Classification; Deep Learning

Keywords – Computer Vision, Audio Classification, Convolutional Neural Networks