Informatics Institute of Technology
In Collaboration With
University of Westminster, UK

University of Westminster, Coat of Arms

Suspicious Activity Detection

A Project Specification Design and Prototype Document by
Ms. Chathuri Dambegodagedara
W1790340/ 20191190
Supervised by
Mr. Asanka Suraweera

February 2023

Submitted in partial fulfillment of the requirements for

the BSc (Hons) Computer Science degree at

the University of Westminster.

ABSTRACT

Nowadays to ensure public safety and security surveillance cameras have been installed in places such as retail stores, malls, airports, restaurants, parks, and such. Since it is a tiresome task for security personnel to manually monitor the collective video feed from all these places, we suggest the creation of a video surveillance system that can identify the kind of anomalous human activity present in a CCTV video to address this problem. In order to distinguish between 13 different sorts of deviant human behavior, such as abuse, arrest, arson, assault, burglary, explosion, gunshot, vandalism, and normal activity, the system uses deep learning techniques, notably Convolutional Neural Networks (CNNs). Using a collection of CCTV videos that is publicly available, we trained and tested our system. For uploading video inputs and showing the output results, the system was created as a web application. With an accuracy rate of 85%, our algorithm showed encouraging results in identifying unusual human activities. In order to assess the effectiveness of our system, we employed data science criteria including precision, recall, and F1 score. The technology has the potential to be used in security-related fields like the surveillance of airports, banks and ATMs, shopping centers, and train stations. The suggested approach can efficiently spot people engaging in questionable behavior and notify the appropriate authorities, increasing safety in public areas.