

## **Abstract**

Motor vehicle theft is a persistent, and growing problem in many countries and can be a source of extreme distress and financial problems for many people. This problem is compounded by the issues law enforcement agencies face when trying to retrieve stolen vehicles as these agencies still rely on labor-intensive methods for identifying stolen vehicles. This project is an attempt to address this issue by automating the process of identifying stolen vehicles using Hong Kong's existing network of traffic enforcement cameras.

The project aims at analyzing video feed from traffic enforcement cameras and examining it through an object detection model to locate motor vehicles in the video feed. The model also performs classification analysis and tests the images of motor vehicles against descriptions of stolen vehicles, alerting law enforcement agencies in the event of a positive match.

The current stage of the project is data collection, augmentation, and labeling. Image frames extracted from road traffic videos are used to train and develop the model. These images are labeled using naive implementations of similar models, and then corrected and verified manually.

The next step in this project is the development of preliminary object detection models. This stage aims at finding the best technique, implementation, and hyper-parameters for the project. Future studies might be interested in investigating the performance of combinations of models made with different techniques and implementation in an ensemble manner.

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## List of Abbreviation

AI ..... Artificial Intelligence

ML ..... Machine Learning

FPS ..... Frames Per Second

DSLR ..... Digital Single Lens Reflex

LEA ..... Law Enforcement Agencies