

ANALYSIS OF A CRIME SCENE GETAWAY VEHICLE'S ESCAPING PATH

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Abstract. Crime scene getaway vehicle is a vehicle that is used for fleeing from the crime scene. Being able to track the getaway vehicle would help investigators locate escape route of the criminals or terrorists. However, information about the vehicle's appearance must be available to the investigators in order to track the escape route. Sometimes this information may not be available to the investigator. Investigators must rely on limited information and predict possible escape routes in order to intercept the criminals or terrorists as soon as possible. Better prediction should be obtained as we explore the decision of criminals on selecting escape path, which is based on path's condition and distance from the crime scene. In addition, real-time information collected by sensors along the paths (i.e., camera sensors) can help improve the accuracy of escape path prediction. This paper explores the analysis method for predicting criminal's escape paths, which predicts the possible escape routes of the criminals or terrorists from the crime scene. The analysis is based on the Bayesian Network, in which the path from node to node is chosen based on the Bayes Inference theory. In particular, the criminal's decision on the path selection is modeled by the Bayesian Network. The analysis involves finding the selection probability on each path, which is conditional on path conditions, spotted suspected vehicles and assumed criminal's preference (i.e., distance from the crime scene). Hence, the predicted path is likely the path with the highest probability. The analysis presented in this paper would contribute to the field of artificial intelligence, such that it can be used as the analysis tool to model and predict criminal's behaviors in selecting escape path.

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INTRODUCTION

Crime scene getaway is an act of a perpetrator to flee from the crime scene in order to avoid being apprehended by the law enforcement. Fleeing by vehicle is the most common method [1].

By knowing the escape path of the fleeing vehicle, the law enforcement can track down the perpetrator or cut off the escape path. This requires analysis and prediction of intensive information on road traffic and criminal's behavior, in which human investigator cannot handle this workload single-handedly.

Thus, an automated system capable of analysis and prediction on escape route would be of great benefit. However, the system must rely on intensive amount of information.

Some information may not be available i.e., no witness has spotted any getaway vehicle. Sometimes, information has changed over time i.e., a perpetrator changes vehicle or license plate during escape.

Criminal may have a preference in selecting a path. Hence, the possible escape paths are dynamic based on available information at the time. The automated system must be able to cope with adaptive information and uncertainty of criminal's behavior.

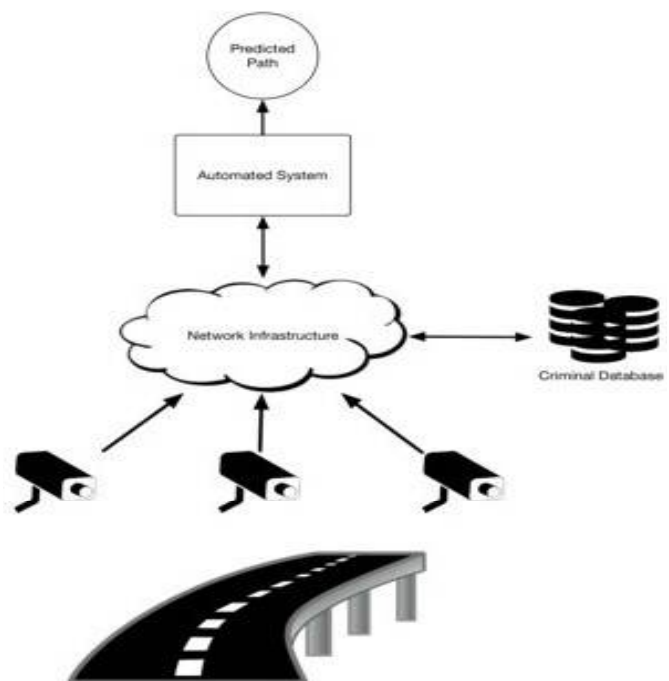


Fig. 1 . Smart camera system for predicting criminal's escape path

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