

# **Mobile Crime Reporting System with Blockchain Based Data Provenance**

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M.Sc. in Specialized EAD

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December 2021

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## **ABSTRACT**

The security situation in Sri Lanka has deteriorated over time due to the low number of police personnel in the country and the authorities lack concrete to solve crime incidents since there is no proper crime reporting system. Crime incidents happen everywhere but the witness to these crime incidents nonexistence a convenient and efficient method to report them. Security challenges have increased from mere theft to carjacking attacks and to more serious and evolved challenges like murder and terrorism. With increase of smartphones in Sri Lanka, an opportunity exists because of the untapped gap of incidents reporting. The proposed solution was to develop a mobile application that can be used to report any crime incidents. The mobile application was developed on the Android platform and will integrate the use of GPS location services. It was developed concurrently with a web application developed in ReactJS language to supplements its functionality and MYSQL used as the database server. The solution has an administrative web-based backend that will be accessed by the police force to ensure they get detailed information of criminal activities. The web application was adapted the MVC architecture with object-oriented environment. In addition to that online UML tool is being used to draw UML diagrams. Thus, the mobile application comes in trend to provide a solution to the way users report crime incidents. The suggestions made by users were used to enhance the application functionality and performance. The application will allow users to report crime incidents that happen in anywhere anytime. Based on the overall statistics of user testing and evaluation, can say that the application fulfills its simplicity and usability requirement and based on the questionnaire responses, the application is generally considered easy to understand and use.

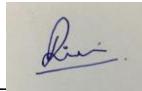
## **DECLARATION**

The thesis is my original work and has not been submitted previously for a degree at this or any other university/institute.

To the best of my knowledge, it does not contain any material published or written by another person, except as acknowledged in the text.

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This is to certify that this thesis is based on the work of

H.M.R.P Rajapaksha under my supervision. The thesis has been prepared according to the format stipulated and is of acceptable standard.

Certified by:

Supervisor Name: Mr.Udara Samarathunga

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Signature:

Date:

## **ACKNOWLEDGMENTS**

I would like to express my gratitude to Mr.Dilshan Silva, Course Coordinator of Master of EAD, Dr Dharshana Kasthuriranthna and Mr. Pasan Yapa, Project Coordinators for giving a great support throughout the degree program.

I would like to pay my special gratitude to Mr. Udara Samarakthunga who supervised me in many ways at countless times in my difficulties by contributing his valuable time and for guiding me in delivering the project successfully.

A heartfelt thanks to my family for all the guidance and motivation given in my time of need to drive me forward, and I would like to extend my special thanks to Mr. M H S Tharaka, who is a doctoral student at the University of Oulu, Finland for supporting me to narrow down the implementation domain in a more specific manner. Also, I would give credit to my colleagues and friends who helped me in various ways to make this project a success.

Finally, I thank all those whom I have not mentioned but assisted in this project in one way or the other and those who supported me in my efforts.

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## **LIST OF ABBREVIATIONS**

GPS	- Global Positioning System
PDA	- Personal Digital Assistant
CCTV	- Closed Circuit Television
WIFI	- Wireless Fidelity
SDLC	- System Development Life Cycle
USA	- United States of America
SQL	- Structured Query Language
DBMS	- Database Management System
UML	- Unified Modeling Language
OOD	- Object Oriented Design
OO	- Object Oriented
ERD	- Entity Relationship Diagram
REST API	- Representational State Transfer Application Program Interface
IPFS	- Interplanetary File System
MVC	- Model, Viewer, Controller
GUI	- Graphical User Interface
OS	- Operating System
ICT	- Information and Communications Technology