FINAL YEAR PROJECT REPORT

AN AUTOMATE MOBILE APPLICATION FOR FIRE DETECTION USING DEEP LEARNING

In fulfillment of the requirement
For degree of
BS (Information Technology)

By

BISMA KHURSHEED	**54249 BSIT**
BUSHRA RAFIQUE MALIK	**54247 BSIT**
HAFIZA ROMAISA ASHRAF	**54245 BSIT**

SUPERVISED

BY

DR. HUMERA FAROOQ

BAHRIA UNIVERSITY (KARACHI CAMPUS)

2018-2022

DECLARATION

We hereby declare that this project report is based on our original work except for citations and quotations which have been duly acknowledged. We also declare that it has not been previously and concurrently submitted for any other degree or award at Bahria University or other institutions.

Signature : Bisma

Name : BISMA KHURSHEED.

Reg No. : 54249

Signature :

Name : BUSHRA RAFIQUE MALIK.

Reg No. : 54247

Signature :

Name : HAFIZA ROMAISA ASHRAF.

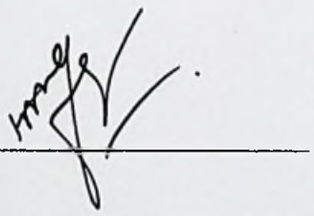
Reg No. : 54245

Date : 15-january-2022

APPROVAL FOR SUBMISSION

We certify that this project report entitled **"AN AUTOMATE MOBILE APPLICATION FOR FIRE DETECTION USING DEEP LEARNING"** was prepared by BISMA KHURSHEED, BUSHRA RAFIQUE MALIK, HAFIZA ROMAISA ASHRAF has met the required standard for submission in partial fulfilment of the requirements for the award of Bachelor of BSIT at Bahria University.

Approved by,

Signature : 

Supervisor: Dr Humera Farooq

Date : 15-January-2022

The copyright of this report belongs to Bahria University according to the Intellectual Property Policy of Bahria University BUORIC-P15 amended on April 2019. Due acknowledgement shall always be made of the use of any material contained in, or derived from, this report.

© 2019 Bahria University. All right reserved.

ACKNOWLEDGEMENTS

We would like to thank everyone who had contributed to the successful completion of this project. We would like to express my gratitude to my research supervisor, Dr HUMERA FAROOQ for her invaluable advice, guidance and her enormous patience throughout the development of the research.

In addition, we would also like to express my gratitude to our loving parent and friends who had helped and given me encouragement.

AN AUTOMATE MOBILE APPLICATION FOR FIRE DETECTION USING DEEP LEARNING

ABSTRACT

As a new fire detection technology, image fire detection has recently played a important role in reducing fire losses by alarming users early through early fire detection. Image fire detection is based on an algorithmic analysis of images. However, there is a lower accuracy, delayed detection, and a large amount of computation in common detection algorithms, including manually and machine automatically extracting image features. Therefore, novel image fire detection algorithms based on the advanced object detection CNN models. A comparison between proposed and current systems reveals that the accuracy of fire detection algorithms is depend on object detection CNNs is higher than other algorithms. We use TensorFlow in our project. TensorFlow is a Python library for fast numerical computing created and released by Google. It is a foundation library that can be used to create Deep Learning models directly or by using wrapper libraries that simplify the process built on top of TensorFlow.

TABLE OF CONTENTS

DECLARATION		**ii**
APPROVAL FOR SUBMISSION		**iii**
ACKNOWLEDGEMENTS		**v**
ABSTRACT		**vi**
TABLE OF CONTENTS		**vii**
LIST OF FIGURES		**x**
LIST OF SYMBOLS / ABBREVIATIONS		**xi**
LIST OF APPENDICES		**xii**
CHAPTERS		
1	**INTRODUCTION**	13
	1.1 Background	13
	1.2 Problem Statement	13
	1.3 Aims and Objectives	14
	1.4 Scope of Project	14
2	**LITERATURE REVIEW**	**15**
	2.1 Convolutional Neural Network	15
	2.2 Existing Research	16
3	**DESIGN AND METHODOLOGY**	**20**
	3.1 Overview	20
	3.2 Design and Methodology	20
5	**RESULTS AND DISCUSSIONS**	**26**
	5.1 THE CHALLENGE	26

6	**CONCLUSION AND RECOMMENDATIONS**		**32**
	6.1	CONCLUSION	32
	6.2	FUTURE WORK AND RECOMMENDATION	32
	REFERENCES		**33**
	APPENDICES		**34**