

UNIVERSITI TEKNOLOGI MARA

**PERSONALITY PREDICTION USING
RANDOM FOREST ALGORITHM**

WAN ABDUL QAYYUM BIN ABDUL WAHAB

BACHELOR OF COMPUTER SCIENCE (Hons.)

JULY 2023

AKNOWLEDGEMENT

Alhamdulillah, I praise and thank to Allah SWT, thanks to His Almighty I was able to complete this task within the specified time frame. First and foremost, I would want to express my gratitude to CSP600 lecturer who has guide me through this project, Madam Ummu Fatihah binti Mohd Bahrin, and also, I would like to thank my supervisor who has supervise and help me through this project, Madam Siti Nurbaya binti Ismail. My project will not be able to finish without the guidance and assistance from my lecturer and supervisor.

Special appreciation also goes to my beloved parents in supporting me through this project. They caring helps me to accomplish my project.

Lastly, I would like to thank to my friends. Their assistance and supports have help me to succeed my research in specific time frame. I would also like to thank that are not listed above who have help, guide, support, and give an encouragement through this project.

ABSTRACT

The research effort attempted to create a personality prediction system based on the Random Forest algorithm. The issue statement emphasized the need for an objective and dependable approach to evaluate an individual's personality for recruitment and position appropriateness. Previous research has underlined the importance of personality prediction in recruiting, as well as the Random Forest algorithm's ability to provide vital insights into applicant suitability for certain tasks, reduce bias, and predict long-term employee retention and satisfaction. The research objectives included developing and executing a data gathering strategy, analyzing the data, and assessing the model's performance. The study methodology included a systematic approach to problem solving, such as developing data collecting tools, selecting research approaches, and implementing data analysis procedures. The output of this project included the project's conceptual framework, system architecture, user interface, and performance assessment, such as the confusion matrix and accuracy computation. The conclusion emphasized the findings' relevance in improving knowledge of personality prediction and classification systems, as well as future project upgrade ideas.

TABLE OF CONTENTS

CONTENT	PAGE
SUPERVISOR APPROVAL.....	i
STUDENT DECLARATION	ii
AKNOWLEDGEMENT	iii
ABSTRACT	iv
LIST OF FIGURES	viii
LIST OF TABLES.....	ix
 CHAPTER 1: INTRODUCTION	
1.1 Background Study	1
1.2 Problem Statement	2
1.3 Project Objective	3
1.4 Project Scope.....	3
1.5 Project Significant.....	5
1.6 Research Framework.....	6
1.7 Conclusion	7
 CHAPTER 2: LITERATURE REVIEW	
2.1 Introduction	8
2.2 Personality Prediction	8
2.3 Classification Algorithm	14
2.3.1 Type of Classification Algorithm	15

2.4 Random Forest Algorithm.....	18
2.4.1 How Does Random Forest Work?	19
2.4.2 Advantages and Disadvantages of Random Forest	20
2.4.3 Pseudocode of Random Forest Algorithm.....	22
2.5 Implementation of Random Forest in Various Problem.....	23
2.6 Similar Works.....	35
2.7 Implications of Literature Review	54
2.8 Conclusion	55

CHAPTER 3: METHODOLOGY

3.1 Overview of Research Framework Methodology	56
3.1.1 Detailed Research Framework	57
3.2 Preliminary Study	61
3.2.1 Literature Study	61
3.2.2 Data Pre-Processing	64
3.2.3 Data Collection.....	62
3.3 Design and Implementation Phase.....	66
3.3.1 System Architecture.....	67
3.3.2 Flowchart.....	68
3.3.3 User Interface	69
3.3.4 Pseudocode for Selected Algorithm	71
3.3.5 Prototype Implementation	71
3.4 Performance Evaluation	72
3.4.1 Confusion Matrix	72
3.4.1.1 Accuracy, Percision, Recall, F1	73
3.5 Gantt Chart.....	75
3.6 Conclusion	77