**ACKNOWLEDGEMENT**

The successful completion of this capstone project is owed to the tremendous effort and support of various individuals, whose unique contributions made this achievement possible, and I would like to sincerely thank and acknowledge them.

First and foremost, I offer my gratitude and recognition to the **Almighty God** for His continuous provisions throughout my journey in completing this thesis successfully. All of these blessings have been bestowed upon me through His grace, mercy, and unwavering love. With God, all things are achievable.

I extend my heartfelt appreciation to all my professors and instructors at NONESCOST, as well as to my advisor, **Dr. Kristine T. Soberano**, for their guidance, expertise, patience, constructive comments, and suggestions, all of which have played a crucial role in making this study possible.

Lastly, I would like to express my deep gratitude to my beloved wife, **Mrs. Meralynn F. Carton**, as well as the rest of my family, friends, and all the supportive individuals who have worked behind the scenes, offering unwavering support and encouragement throughout my academic journey.

**ABSTRACT**

*This study aimed to develop an Alumni Tracker with Job Matching system using Artificial Intelligence (AI) integration. The system collects and analyzes data on alumni's education, work experience, skills, and preferences to provide personalized job recommendations. The study utilized an iterative approach and Agile methodology in the system design, development, testing, deployment, and maintenance phases. The project team used AI algorithms, including Hybrid Filtering, Collaborative Filtering, User Based Content Filtering, and NLP algorithm, to develop an effective job matching system. The system was evaluated based on the ISO 25010 Software Quality Model criteria, and the results indicated that the system met the requirements for reliability, usability, maintainability, security, compatibility, and functional suitability. The Alumni Tracker with Job Matching using AI Integration system sets itself apart from other alumni tracker systems by providing personalized job recommendations and up-to-date information on job openings. The study concludes that the integration of AI in the Alumni Tracker system is highly effective and beneficial for managing alumni data, providing personalized job recommendations through AI job matching and NLP algorithms, and generating detailed reports for alumni, employers, employment rate, and job postings.*

**TABLE OF CONTENTS**

TITLE PAGE i

Approval Sheet ii

Acknowledgment iii

Abstract iv

Table of Contents v

List of Figures vii

List of Tables viii

Chapter I - INTRODUCTION

Background of the Study 1

Objectives of the Study 2

Scope and Limitations 3

Significance of the Study 4

Definition of Terms 6

Conceptual Framework of the Study 8

Chapter II - RELATED LITERATURE AND PRIOR ARTS SEARCH

Related Literatures 9

Prior Arts 17

Synthesis 22

Chapter III - METHODOLOGY

System Design 23

Data Gathering Procedure 25

Context Flow Diagram 28

Data Flow Diagram 29

Entity-Relationship Diagram 30

Application Architecture 31

Use Case Diagram 32

Software Requirements 33

Hardware and Other Required Devices 34

Cost-Benefit Analysis 34

Chapter IV - PRESENTATION, ANALYSIS, AND INTERPRETATION OF DATA

In terms of managing NONESCOST Alumni’s data 41

In terms of integrating AI using Job Matching Algorithm to provide personalized job recommendations 44

In terms of integrating AI using Natural Language Processing (NLP) Algorithm to analyze text and providing suggestions 45

In terms of generating report 52

In terms of the characteristics set in ISO 25010 Software Quality Model 56

Chapter V - SUMMARY, CONCLUSION, AND RECOMMENDATIONS

Summary of Findings 59

Conclusion 60

Recommendation 61

References 65

APPENDICES

A  Letter to the Client 68

B  Self-made Questionnaire for ALMAI 69

C  Questionnaire for ISO 25010:

Software Quality Standards 71

Curriculum Vitae 74

**LIST OF FIGURES**

Figure 1 Conceptual Framework of the Study 8

Figure 2 Agile Software Development 23

Figure 3 Context Flow Diagram 28

Figure 4 Data Flow Diagram 29

Figure 5 Entity Relationship Diagram 30

Figure 6 Application Architecture 31

Figure 7 Use Case Diagram 32

Figure 8 Alumni’s Profiles 37

Figure 9 Alumni’s Education 38

Figure 10 Alumni’s Work Experience 38

Figure 11 Alumni’s Skills Assessment 39

Figure 12 Alumni’s Job Preferences 40

Figure 13 Alumni’s Job Matching 42

Figure 14 Job’s Best Candidate 43

Figure 15 Alumni Job Preferences with AI 44

Figure 16 Alumni Report per Batch 46

Figure 17 Alumni Report per College 47

Figure 18 Alumni Report per Courses 48

Figure 19 Employer Report 49

Figure 20 Employer Report per Industry 49

Figure 21 Job Posting Report per year 50

Figure 22 Job Posting Report per month 51

Figure 23 Employer Dashboard 53

Figure 24 Admin Dashboard 54

Figure 25 Alumni Dashboard 55

**LIST OF TABLES**

Table 1  Reliability and Statistics 27

Table 2  Software Specifications 33

Table 3  Hardware and Other Required Devices 34

Table 4  Developmental Cost 34

Table 5  Operational Cost 35

Table 6  Total Developmental and Operational Cost 35

Table 7  Benefits of the system 36

Table 8  In terms of managing NONESCOST Alumni’s data 41

Table 9  In terms of integrating AI using the

Job Matching Algorithm 44

Table 10 In terms of integrating AI using Natural

Language Processing (NLP) 45

Table 11 In terms of generating a report 52

Table 13 In terms of the characteristics set in

ISO 25010 Software Quality Model 56