

## TABLE OF CONTENTS

APPROVAL PAGE .....	i
PLAGIARISM-FREE STATEMENT .....	ii
MOTTO PAGE .....	iii
PREFACE .....	1
TABLE OF CONTENTS .....	3
ABSTRACT .....	5
CHAPTER I INTRODUCTION .....	6
1.1 Background .....	6
1.2 Research Problem .....	7
1.3 Research Scope .....	8
1.4 Research Objective .....	8
1.5 Research Benefit .....	8
1.6 Research Methodology .....	9
1.7 Thesis Organization .....	9
CHAPTER II LITERATURE REVIEW .....	11
CHAPTER III THEORETICAL BASIS .....	18
3.1 Machine Learning .....	18
3.2 Machine Learning as a Service (MLaaS) .....	20
3.2.1 IBM Watson Machine Learning .....	22
3.2.2 Google AI Platform .....	23
3.2.3 Amazon Machine Learning and SageMaker .....	23
3.2.4 Microsoft Azure Machine Learning .....	24
3.3 Model Evaluation .....	24
3.4 Machine Learning Implementation for Business .....	29
CHAPTER IV ANALYSIS AND DESIGN .....	30
4.1 Research Overview .....	30
4.2 Analysis .....	31
4.3 Data Preparation .....	31
4.4 System Planning .....	32
4.4.1 IBM Watson Machine Learning .....	32

4.4.2	Google AI Platform.....	33
4.4.3	Amazon Machine Learning and SageMaker .....	33
4.4.4	Microsoft Azure Machine Learning.....	35
4.5	Testing .....	36
CHAPTER V IMPLEMENTATION .....		37
5.1	Implementation Overview .....	37
5.2	Implementation Environment.....	37
5.3	Preparation.....	38
5.4	IBM Watson AutoAI Machine Learning.....	39
5.5	Amazon Machine Learning and SageMaker .....	42
5.6	Microsoft Azure Machine Learning .....	44
CHAPTER VI EVALUATION AND DISCUSSION .....		47
6.1	Result .....	47
6.1.1	IBM Watson AutoAI Machine Learning.....	47
6.1.2	Amazon Machine Learning and SageMaker .....	48
6.1.3	Microsoft Azure Machine Learning .....	51
6.2	Discussion.....	52
CHAPTER VII CONCLUSION AND SUGGESTION .....		53
REFERENCES.....		54