

CONTENTS

APPROVAL	ii
SELF DECLARATION AGAINST PLAGIARISM	iii
ABSTRACT	iv
ABSTRAK	v
DEDICATION	vi
ACKNOWLEDGMENTS	vii
PREFACE	viii
CONTENTS	ix
LIST OF TABLES	xi
LIST OF FIGURES	xii
LIST OF TERMS	xiii
LIST OF NOTATIONS	xiv
1 INTRODUCTION	1
1.1 Rationale	1
1.2 Statement of the Problem	4
1.3 Objective and Hypotheses	5
1.3.1 Objectives	5
1.3.2 Hypotheses	5
1.4 Assumption	5
1.5 Scope and Delimitation	6
1.6 Significance of the Study	6
2 REVIEW OF LITERATURE AND STUDIES	8
2.1 Related Literatures	8
2.2 Related Studies	10
2.2.1 Dynamic Graph Attention Network (GATv2)	10
2.2.2 Bidirectional Long Short-Term Memory (BiLSTM)	12
2.2.3 Attention Mechanism (AM)	14
2.2.4 Performance Evaluation	16

3 RESEARCH METHODOLOGY	18
3.1 Research Design	18
3.1.1 Dataset Description	19
3.1.2 Preprocessing	20
3.1.3 Model Development	24
3.1.4 Training & Hyperparameters configuration	26
3.2 Experimental Scenario	27
3.3 Tools for Data Analysis	28
3.3.1 Programming Language	29
3.3.2 Library and Framework	29
3.3.3 Tools	29
4 PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA	30
4.1 Parameter Exploration Results	30
4.2 Best Model Configuration Analysis	31
4.3 Model Comparison Results	33
4.3.1 State-of-the-art Benchmark Model Comparison	33
4.3.2 Baseline Comparison	34
4.4 Ablation study	36
4.5 Summary of Findings	37
5 CONCLUSION AND RECOMMENDATIONS	39
5.1 Conclusions	39
5.2 Recommendations	40
BIBLIOGRAPHY	41
Appendices	45
A Dataset Overview & Experiment Result	47
A.1 Davis and KIBA Datasets Statistical Summary	47
A.2 Hyperparameters Tuning Results	48
B Curriculum Vitae	50