

---

# CONTENTS

<b>APPROVAL</b>	<b>ii</b>
<b>SELF DECLARATION AGAINST PLAGIARISM</b>	<b>iii</b>
<b>ABSTRACT</b>	<b>iv</b>
<b>ABSTRAK</b>	<b>v</b>
<b>DEDICATION</b>	<b>vi</b>
<b>ACKNOWLEDGMENTS</b>	<b>vii</b>
<b>PREFACE</b>	<b>viii</b>
<b>CONTENTS</b>	<b>ix</b>
<b>LIST OF TABLES</b>	<b>xi</b>
<b>LIST OF FIGURES</b>	<b>xii</b>
<b>LIST OF TERMS</b>	<b>xiii</b>
<b>LIST OF NOTATIONS</b>	<b>xiv</b>
<b>1 INTRODUCTION</b>	<b>1</b>
1.1 Rationale . . . . .	1
1.2 Problem Formulation . . . . .	2
1.3 Objective and Hypothesis . . . . .	2
1.4 Assumption . . . . .	2
1.5 Scope and Delimitation . . . . .	2
1.6 Related Works . . . . .	3
<b>2 REVIEW OF LITERATURE AND STUDIES</b>	<b>5</b>
2.1 Video Processing . . . . .	5
2.1.1 Video Format . . . . .	5
2.1.2 Color Image Processing . . . . .	5
2.2 Digital Video Forgery . . . . .	6
2.3 Optical Flow . . . . .	7
2.4 Outliers Detection . . . . .	9
2.5 Similarity . . . . .	9

<b>3</b>	<b>RESEARCH METHODOLOGY</b>	<b>11</b>
3.1	Scene Segmentation Interframe Forgery Identification . . . . .	11
3.2	Proposed System . . . . .	12
3.2.1	Motion Estimation . . . . .	13
3.2.2	Forgery Identification . . . . .	15
<b>4</b>	<b>EVALUATION PERFORMANCE AND ANALYSIS</b>	<b>19</b>
4.1	Dataset . . . . .	19
4.2	Parameter Setting . . . . .	19
4.3	Performance Analysis . . . . .	19
4.3.1	Duplication Forgery (Dup) . . . . .	20
4.3.2	Insertion Forgery . . . . .	20
4.3.3	Deletion Forgery (Del) . . . . .	21
4.4	Comparison with Existing Methods . . . . .	22
4.5	Robustness to Compression . . . . .	22
4.6	Robustness to Blind Video . . . . .	23
<b>5</b>	<b>CONCLUSION AND RECOMMENDATIONS</b>	<b>24</b>
5.1	Conclusions . . . . .	24
5.2	Recommendations . . . . .	24
	<b>BIBLIOGRAPHY</b>	<b>25</b>
	<b>Appendices</b>	<b>25</b>
<b>A</b>		<b>27</b>
A.1	Lucas Kanade Optical Flow Equation . . . . .	27
A.2	Experimental Results . . . . .	27
<b>B</b>	<b>Curriculum Vitae</b>	<b>46</b>