

CONTENTS

LIST OF TABLES.....	i
REFERENCES.....	ii

CHAPTER 01: INTRODUCTION	1-5
1.1 Introduction	2
1.2 Problem Definition	4
1.3 Aim of our work	4
1.4 Our Contribution	4
1.5 Organization of report	5
CHAPTER 02: LITERATURE SURVEY	6-18
2.1 Randomization method	7
2.1.1 Additive data perturbation	7
2.1.2 Multiplicative data perturbation	7
2.2 Data transformation method	8
2.2.1 Translation Data Perturbation Method	8
2.2.2 Scaling data perturbation	8
2.2.3 Rotation Data Perturbation Method	8
2.2.4 Hybrid Data Perturbation Method	8
2.3 Data Swapping	9
2.4 Condensation approach	9
2.5 Micro-Aggregation Approach	11
2.5.1 Univariate Micro-aggregation	11
2.5.2 Multivariate Micro-aggregation	11
2.5.3 Projection based Micro-aggregation	11
2.5.4 MDAV Micro-aggregation	12
2.6 Tree based data Perturbation Approach	13
2.7 Privacy-Preserving Clustering by Object Similarity-Based Representation (OSBR)	14
2.8 Privacy-Preserving Clustering by Dimensionality Reduction (DRBT)	16
2.9 An Effective Data Transformation Approach for Privacy Preserving Clustering	17
2.10 Privacy Preservation by Generalisation	18

CHAPTER 03: BACKGROUND OF WORK	21-24
3.1 Basics of Data Perturbation	22
3.2 Basics of Imaging Geometry	22
3.3 Histogram equalisation in image processing	22
3.4 Clustering analysis	23
3.5 K-means algorithm	23
3.6 Distance measure	24
CHAPTER 04: PROPOSED APPROACH	25-32
4.1 Concept of Histogram	26
4.1.1 Introduction	26
4.1.2 Mathematical Definition	26
4.1.3 Histogram in Image Processing	26
4.1.4 Histogram Equalisation	27
4.2 Proposed Algorithm	29
4.2.1 Incremental Clustering Algorithm	29
4.2.2 Histogram Equalisation of a Cluster	30
4.3 Demonstration of the Proposed Technique	30
4.4 Complexity Analysis	32
CHAPTER 05: EXPERIMENTS AND RESULTS	33-36
5.1 Dataset Overview	34
5.2 Measuring Effectiveness	34
5.3 Analysis of Privacy Level	35
CHAPTER 06: CONCLUSION AND SCOPE OF FUTURE WORK	37-38
6.1 Conclusion	38
6.2 Scope of Future Work	38

LIST OF TABLES

Table 2.1	Patients Table	19
Table 2.2	Voters List	19
Table 2.3	Patient Table – Personalized	19
Table 4.1	Histogram of an input image	27
Table 4.2	Running sum of histogram values	27
Table 4.3	Running sum divided by total pixels	28
Table 4.4	Histogram equalised values	28
Table 4.5	Mapping of gray levels by one to one correspondence	29
Table 4.6	Synthetic dataset	30
Table 4.7	Scaled dataset rounded	30
Table 4.8	Clusterwise min- max values of the attributes	31
Table 4.9	Perturbed values of attributes of the records	32
Table 5.1	Misclassification error	35
Table 5.2	Privacy of the different datasets	36