Final Report

Samuel Jackson

February 11, 2015

Contents

1	Intro	roduction	4
	1.1	Abstract	4
	1.2	Project Overview	4
	1.3	Project Deliverables	4
2	Bac	kground of Mammography	4
		2.0.1 Breast Anatomy	4
		2.0.2 Risk Assessment	4
3	Lite	erature Review	4
	3.1	Feature Detection	4
		3.1.1 Shape Features	4
		3.1.2 Texture Features	4
	3.2	Dimensionality Reduction	4
		3.2.1 Linear	4
		3.2.2 Non-Linear	4
	3.3	Visualisation	4
4	Dat	casets	4
-	4.1	Artificial Data	4
	4.2	Real Data	4
	4.3	Synthetic Data	4
5	Met	thods	4
•	5.1	Preprocessing	4
	5.2	Features	4
	5.3	Dimensionality Reduction	4
	5.4	Visualisation	4
6	Resi	ults	4
٠	6.1	Synthetic Mammograms	4
	6.2	Real Mammograms	4
7		cussion	4
	7.1	Comparison of Real and Synthetic Dataset	4
	7.2	Mapping Between Datasets	4
8		luation	4
	8.1	Critical Evaluation	4
	8 7	Future Work	

1 Introduction
1.1 Abstract
1.2 Project Overview
1.3 Project Deliverables
2 Background of Mammography
2.0.1 Breast Anatomy
2.0.2 Risk Assessment
3 Literature Review
3.1 Feature Detection
3.1.1 Shape Features
3.1.2 Texture Features
3.2 Dimensionality Reduction
3.2.1 Linear
3.2.2 Non-Linear
3.3 Visualisation
4 Datasets
4.1 Artificial Data
4.2 Real Data
4.3 Synthetic Data
5 Methods
5.1 Preprocessing
5.2 Features
5.3 Dimensionality Reduction
5.4 Visualisation
6 Results
6.1 Synthetic Mammograms

6.2 Real Mammograms