

CONTENTS

RESUMEN	i
ABSTRACT	ii
RESUMEN VALENCIANO	iii
Director's Authorization	iv
Codirector's Authorization	v
Thesis Outline	vi
Chapter 1	1
Introduction	1
1.1 Motivation	1
1.2 Objectives	2
1.3 Related Work	3
1.3.1 Breast Cancer	3
1.3.2 Breast Imaging Screening	4
1.3.3 Computer Aides Diagnosis/Detection systems (CAD)	5
1.4 Contribution to Knowledge	7
Chapter 2	9
DEEP-LEARNING-BASED COMPUTER-AIDED SYSTEMS FOR BREAST CANCER IMAGING: A CRITICAL REVIEW	9
Chapter 3	51
BREAST MASS REGIONS CLASSIFICATION FORM MAMMOGRAMS USING CONVOLUTIONAL NEURAL NETWORKS AND TRANSFER LEARNING	51
Chapter 4	84
ULTRASOUND BREAST IMAGES DENOISING USING GENERATIVE ADVERSARIAL NETWORKS (GANs)	84
Chapter 5	114
GAN-BASED DATA AUGMENTATION TO IMPROVE BREAST ULTRASOUND AND MAMMOGRAPHY MASS CLASSIFICATION	114
Chapter 6	152
BRANET: A MOBIL APPLICATION FOR BREAST IMAGE CLASSIFICATION BASED ON DEEP LEARNING ALGORITHMS	152
Chapter 7	185

General discussion	185
Chapter 8	194
Conclusions	194
Bibliography	198
Appendix I. Documentation related to the articles of this thesis	207