LIST OF ABBREVIATIONS

AI	Artificial intelligence
ANN	Artificial neural network
BRISK	Binary robust invariant scalable key points
CAD	Computer-aided diagnosis
CCA	Clustering classification accuracy
CCV	Colour coherence vector
CD	Canberra distance
CDH	Colour difference histogram
CLD	Colour layout descriptor
CS-LBP	Center-symmetric local binary patterns
Db	Daubechies
DCT	Discrete cosine transform
DDSM	Digital database for screening mammography
DWT	Discrete wavelet transform
GT	Ground truth
ED	Euclidean distance
FAST	Features from accelerated segment test
FCH	Fuzzy colour histogram
FN	False Negative
FP	False Positive
GLCM	Gray level co-occurrence matrix
GUI	Graphical user interface
HH	High-High sub-band
HL	High-Low sub-band

HOG	Histogram of gradient
HSV	Hue, Saturation, and Value
HID	Hybrid information descriptor
k-NN	k-nearest neighbors
LBP	Local binary patterns
LL	Low- Low sub-band
LH	Low-High sub-band
MIAS	Mammographic image analysis and society
MCC	Matthew's correlation coefficient
mRMR	Minimum redundancy-maximum relevance
OT	Oliva and Torralba
OC-LBP	Orthogonal combination of local binary patterns
OAP	Overall average precision
OAR	Overall average recall
PCA	Principle component analysis
QCA	Query classification accuracy
RF	Random forests
RI	Random index
ROC	Receiver operating characteristics
ROI	Region of interest
SIFT	Scale invariant feature transform
SOM	Self-organizing map
SURF	Speed up robust feature
SVM	Support vector machine
SVM-RFE	support vector machine based recursive feature elimination
TN	True Negative
TP	True positive
WCS-LBP	Wavelet-based center symmetric-local binary patterns

LIST OF SYMBOLS

M, N	Size of images
I	Image
$H(I)$	Histogram of I
Q_i	Quantized value for bin i
μ	Mean
σ	Standard deviation
X	Matrix containing total number of pixels
S_k	Skewness
$\Delta x, \Delta y$	Pixel distance
$G(p, q, \Delta x, \Delta y)$	Gray level co-occurrence matrix
p, q	Relative gray intensities
σ_x , σ_y	Gaussian envelope along the *X and* Y-axes
θ	Orientation
w	Modulation
$g(x, y)$	Gabor function
n	Size of feature vector/ classes
F^a, F^b	feature vectors of two images a and b
c	Number of images in the cluster
Pr	Percentile
K	Number of images
P	Connectivity from neighbouring pixels
R	Neighborhood radius
g_i, g_c	Gray values of neighborhood and center pixels

w_i	Weight of i^{th} feature
C_i	i^{th} class or i^{th} cluster
h	Orientation parameters in horizontal direction
v	Orientation parameters vertical direction
d	Orientation parameters in diagonal direction
$\psi(t)$	Mother wavelet
a	Dilation parameter
b	Translation parameter
ϕ (x)	Scaling function
t	Threshold for segmentation
FS	Feature set
$\eta(t)$	Learning rate