

To my parents

Late Putul Ch. Das & Monorama Das

My elder brothers

Manju Kr. Das & Ranjit Kr. Das

and

My wife

Mrs. Pompa Das

DECLARATION

I, Sanju Das, bearing Registration Number Ph.D/1882/12 Dated 09-04-2012, hereby declare that the subject matter of the thesis entitled “Cloud Detection and Correction of Satellite Image using RSGIS” is the record of work done by me and that the contents of the thesis did not form the basis for award of any other degree to me or to anybody else to the best of my knowledge. The thesis has not been submitted in any other University / Institute. This thesis is being submitted to Assam University for the degree of Doctor of Philosophy in Computer Science.

Place: Assam University, Silchar

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ABBREVIATION

RSGIS	Remote Sensing and Geographic Information System
HRP	High Resolution Picture
MCSST	Multi-Channel Sea Surface Temperature
EMR	Electro Magnetic Radiation
GPS	Global Positioning System
USGS	United States Geological Survey
DB	Data Base
SDSS	Spatial Decision Support Systems
VRML	Virtual Reality Modelling Language
NHS	National Health Service
RS	Remote Sensing
GIS	Geographic Information System
IFOV	Instantaneous Field of View
dpi	Dots Per Inch
NI	Near Infrared
L_T	Total radiance is measured by Sensor
T_R	Atmospheric Transmittance
R	Object Reflectance
E_T	Total irradiance reaching the earth
DN	Digital Number
AVHRR	Advanced Very High Resolution Radiometer
HIRS	High Resolution Infrared Radiometer Sounder
ISCCP	International Satellite Cloud Climatology Project
SMMR	Scanning Multichannel Microwave Radiometer
BPNN	Backpropagation Neural Network
SOM	Self Organizing Map
PNN	Probability Neural Network
GOES	Geostationary Operational Environmental Satellite
BCT	Bispectral Composite Threshold

TBT	Brightness Temperature
SW	Shortwave
LW	Longwave
MERIS	Medium Resolution Imaging Spectrometer
SVM	Support Vector Machines
SSL	Semisupervised Learning
MODIS	Moderate Resolution Imaging Spectrum Radiometer
ENVISAT	Environmental Satellite
MAP	Maximum Posterior Probability
MRF	Markov Random Field
PHD	Probability Hypothesis Density
GM _S	Gaussian mixtures
FISST	Finite Set Statistics
MCC	Maximum Cross Correction
I _{mean}	Cloud Image Mean Value
I _{std}	Cloud Image Standard Deviation Value
MMA	Modified Maximum Average
NSPI	Neighbourhood Similar Pixel Interpolation
I _{min}	Minimum Intensity
I _{max}	Maximum Intensity
HE	Histogram Equilization
GHE	Global Histogram Equilization
AHE	Adaptive Histogram Equilization
BHE	Block-based Histogram Equilization
ACDCR	Automated Cloud Detection & Cloud Removal
PI	Pixel Intensity
T	Threshold Value
RGB	Red Green Blue
Y	Luma Information
IQ	Chrominance Information
RMSE	Root Mean Square Error

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