CHAPTER 1

INTRODUCTION

1.1. Healthcare Systems

1.2. Impact of MRI in Diagnosis

1.3. Growth of MRI Usage

1.4. MRI Examinations On Organs In Percent

1.5. MRI Processing

1.6. Need For The Study

1.6.1. Correctness and Accuracy

1.6.2. Cost and Size

1.6.3. Limitations of Resources

1.7. Cloud Services To Enhance Healthcare System

1.8. Advantages Of Cloud Medical Imaging
1.8.1. Connectivity from Anywhere at Anytime

1.8.2. System Elasticity

1.8.3. Data Protection and Redundancy

1.8.4. Payment Flexibility

1.9. Motivation

1.10. Organization Of The Thesis

CHAPTER 2

LITERATURE REVIEW

2.1. Introduction

2.2. Literature of brain tumor and mri

2.3. Segmentation of brain MR images

2.4. Brain MR image Segmentation Algorithms

2.4.1. Threshold-Based Procedures

2.4.2. Region Based Procedures

2.4.3. Clustering and Classification Methods for Segmentation

2.5 Genetic Algorithms

2.5.1 Genetic Algorithms for brain MRI Segmentation

2.5.2 Parallel Genetic Algorithm for Image Segmentation

2.6 Image Processing in Cloud Computing
CHAPTER 3

DATA COLLECTION AND METHODOLOGY

3.1. Introduction

3.2. Methodology

3.3. Protocols and Workflows for acquisition and processing

3.4. Evading the subjective in selecting the features

3.5. Data Integrity

3.6. Source of Brain MR images

3.6.1. Hardware Description

3.6.2. Subjects

3.6.3. Summary of Imaging Protocols

3.6.4. Description of Protocol:

CHAPTER 4

ANALYSIS AND RESULTS

4.1. INTRODUCTION

4.2. BRAIN MRI SEGMENTATION USING PROPOSED MIGRATION TECHNIQUE

4.2.1. Image Acquisition

4.2.2. Images Storage into HDFS:
4.2.3. Image Pre-Processing

4.2.4. Noise Removal (de-noising)

4.2.5. Skull Striping

4.2.6. Image Sharpening

4.3. Image Features

4.4 Parallel Genetic Algorithm for Image Segmentation

4.4.1 Topology Used

4.4.2 Proposed Average Migration Technique

4.4.3 Segmented Images Output

4.5 SVM for Image Classification

4.6. Proposed Architecture using Hadoop/Spark

4.6.1. Apache Hadoop2.4.0 in AWS Cloud

4.6.2. Spark1.4.0 in AWS cloud

4.7. Performance Evaluation

4.8. Analysis and Discussion

4.8.1. Increase in Brain MRI Segmentation Efficiency

4.8.2. Increase in Performance in Cloud Setup

CHAPTER 5

SUMMARY AND CONCLUSIONS
5.1. Summary

5.2. Contribution of this research

5.3. Future Work

BIBLIOGRAPHY

PUBLICATIONS AND PROCEEDINGS