Project Report on

Image Reconstruction from Different Cross Section of Same Image

By

Shivank Goel (201500253)

In partial fulfillment of requirements for the award of degree in
Bachelor of Technology in Computer Science and Engineering
(2019)

Under the Project Guidance of

Bijoyeta Roy
(Assistant Professor-I)
DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
SIKKIM MANIPAL INSTITUTE OF TECHNOLOGY
(A constituent college of Sikkim Manipal University)
MAJITAR, RANGPO, EAST SIKKIM – 737136

Project Completion Certificate

This is to certify that the below mentioned students of Sikkim Manipal Institute of Technology have worked under my supervision and guidance from **8 Jan 2019 to 8 May 2019** and have successfully completed the project entitled **"Image Reconstruction using different cross section of same image"** in partial fulfillment of the requirements for the award of Bachelor of Technology in Computer Science and Engineering.

University Registration No	Name of Student(s)	Course
201500253	Shivank Goel	B.Tech(C.S.E)

Bijoyeta Roy,
Assistant Professor-I,
Department of Computer Science & Engineering
Sikkim Manipal Institute of Technology
Majitar, East Sikkim – 737136

Project Review Certificate

This is to certify that the work recorded in this project report entitled **"Image Reconstruction From Different Cross Section Of same Image"** has been jointly carried out by **Mr Shivank Goel (Reg 201500253)** of Computer Science & Engineering Department of Sikkim Manipal Institute of Technology in partial fulfillment of the requirements for the award of Bachelor of Technology in Computer Science and Engineering. This report has been duly reviewed by the undersigned and recommended for final submission for Major Project Viva Examination.

 Bijoyeta Roy
Assistant Professor-I
Department of Computer Science & Engineering
Sikkim Manipal Institute of Technology
Majitar, East Sikkim – 737136.

Certificate of Acceptance

This is to certify that the below mentioned students of Computer Science & Engineering Department of Sikkim Manipal Institute of Technology (SMIT) have worked under the supervision of **Bijoyeta Roy** of Sikkim Manipal Institute of Technology (SMIT)**,** Majhitar, Sikkim from 01 Jan 2019 to 01 Jun 2019 on the project entitled **"Image reconstruction from different cross section of same image".**

The project is hereby accepted by the Department of Computer Science & Engineering, SMIT in partial fulfillment of the requirements for the award of Bachelor of Technology in Computer Science and Engineering.

University Registration No	Name of Student(s)	Project Venue
201500253	Shivank Goel	S.M.I.T

Dr Kalpana Sharma
Professor & HOD
Computer Science & Engineering Department
Sikkim Manipal Institute of Technology
Majhitar, Sikkim – 737136

Declaration

We the undersigned, hereby declare that the work recorded in this project report entitled **"Image reconstruction from different cross section of same image"** in partial fulfillment for the requirements of award of B.Tech in Computer Science & Engineering from Sikkim Manipal Institute of Technology (A constituent college of Sikkim Manipal University) is a faithful and bonafide project work carried out at **Sikkim Manipal Institute of Technology** under the supervision and guidance of **Bijoyeta Roy** of **sikkim manipal institute of technology , majitar** .

The results of this investigation reported in this project have so far not been reported for any other Degree / Diploma or any other Technical forum.

The assistance and help received during the course of the investigation have been duly acknowledged.

Mr. Shivank Goel (Reg 201500253) ……………………

Acknowledgement

The completion of 'image reconstruction from different cross sections of the same image' project depends upon cooperation, co-ordination and combined efforts of several sources of knowledge.

I take this opportunity to express my gratitude towards my project guide, **Mrs. Bijoyeta Roy** for her encouragement and guidance thorough the course of the work. I am deeply thankful for her even willingness to give us valuable advice and direction; whenever i approached to her with a problem. I am thankful to her for providing immense guidance for this project.

I am thank-full to **Prof. (Dr.) Kalpana Sharma (HOD, Department of Computer Science & Engineering)** for providing me an opportunity to do the project work in Sikkim Manipal Institute of Technology and giving me all support, which made me complete the project duly.

I am also thankful to our Major project coordinator **Mr. Biswaraj Sen** & **Mr. Sourav Paul,** for proving us the chance to fulfill our project.

I humbly extend my words of gratitude to all the faculty members of the Computer Science & Engineering Department for providing their valuable help, and as well as our families and friends for their moral support, love and affection.

Shivank goel (201500253) ……………

DOCUMENT CONTROL SHEET

1	Report No	CSE/Major Project/B.Tech/Internal/9/2019
2	Title of the Report	Image Reconstruction using different cross section of the same image
3	Type of Report	Research
4	Author(s)	Mr Shivank Goel (Reg 201500253)
5	Organizing Unit	Sikkim Manipal Institute Of Technology, Sikkim, India
6	Language of the Document	English
7	Abstract	Image reconstruction model can help doctors in better visualization of human organs and make it easier and more accurate to diagnosis and prescribe therapy for the patient. Biological imaging produces 2 dimensional images that represents different cross sections of the appropriate part of the human body. image reconstruction model is an important technique for accurate localization and evaluating brain tumor, thus helping neurosurgery planning for brain tumors. Accurate image reconstruction of human tissue is a challenge problem in medical imaging. In this paper, a novel image reconstruction method of human brain MRI images is proposed based on the segmentation of human tissue. First, we propose a novel region-based growing algorithm to get points of an MRI image. . Results showed that the quality of the image brain tissue reconstruction was acceptable and linear interpolation of the image model improved the visualization of the brain surface morphology
8	Security Classification	General
9	Distribution Statement	General

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ABSTTRACT

Image reconstruction model can help doctors in better visualization of human organs and make it easier and more accurate to diagnosis and prescribe therapy for the patient. Biological imaging produces 2 dimensional images that represents different cross sections of the appropriate part of the human body. image reconstruction model is an important technique for accurate localization and evaluating brain tumor, thus helping neurosurgery planning for brain tumors. Accurate image reconstruction of human tissue is a challenge problem in medical imaging. In this paper, a novel image reconstruction method of human brain MRI images is proposed based on the segmentation of human tissue. First, we propose a novel region-based growing algorithm to get points of an MRI image. Then, the moving cubes algorithm is used to reconstruct the accurate 3D object model. Results showed that the quality of the image brain tissue reconstruction was acceptable and linear interpolation of the image model improved the visualization of the brain surface morphology. This bias field inconsistency can induce artifacts in the final image reconstruction that can impact both clinical interpretation of key tissue boundaries and the automated analysis of the data.