

# INSTITUTE OF SCIENCE & TECHNOLOGY FOR ADVANCED STUDIES & RESEARCH THE CHARUTAR VIDYA MANDAL UNIVERSITY 3" Rank (5 Star) among All Colleges of Gujarat by KCG (GSIRF)



# A Project Report on SURFACE AGE ESTIMATION OF SELECTED LUNAR FEATURES USING CRATER SIZE – FREQUENCY DISTRIBUTION (CSFD) TECHNIQUE

Submitted by
TIRTHA JANAKKUMAR JOSHI
(Roll No: 23GI08, Enrollment No: 22301400301008)

Internal Guide

DR. KRUNAL B. SUTHAR
HOD, Geoinformatics
Department - ISTAR
The CVM University
V.V. Nagar-388120,
Gujarat, India

**External Guide** 

DR. R. PHANI RAJASEKHAR
SCI/ENG – SF
PSD/PGSG/EPSA
Space Application Centre
(SAC) – ISRO,
Ahmedabad – 380015
Gujarat, India

Academic year 2024-2025



### INSTITUTE OF SCIENCE & TECHNOLOGY FOR ADVANCED STUDIES & RESEARCH

#### THE CHARUTAR VIDYA MANDAL UNIVERSITY





A Project Report on

# SURFACE AGE ESTIMATION OF SELECTED LUNAR FEATURES USING CRATER SIZE – FREQUENCY DISTRIBUTION (CSFD) TECHNIQUE

Submitted by TIRTHA JANAKKUMAR JOSHI

(Roll No: 23Gl08, Enrollment No: 22301400301008)

Guided by:

DR. KRUNAL B. SUTHAR HOD, Geoinformatics Department - ISTAR

The CVM University V.V. Nagar-388120, Gujarat, India

Academic year 2024-2025



# INSTITUTE OF SCIENCE & TECHNOLOGY FOR ADVANCED STUDIES & RESEARCH

#### THE CHARUTAR VIDYA MANDAL UNIVERSITY





# **CERTIFICATE**

This is to certify that the project work embodied in this report entitled "SURFACE AGE ESTIMATION OF SELECTED LUNAR FEATURES USING CRATER SIZE – FREQUENCY DISTRIBUTION (CSFD) TECHNIQUE" was carried out by Ms. Tirtha Janakkumar Joshi (22301400301008) at the Geoinformatics department, Institute of Science and Technology for Advanced Studies and Research (ISTAR)-CVM University, Vallabh Vidyanagar fulfilment of the requirement for the award of M.Sc. (Geoinformatics) for the Project Work (201400401). This project work has been carried out under my guidance and it is to my satisfaction.

Dr. Krunal B. Suthar

Project Guide,

Head, P.G. Department of Geoinformatics

**ISTAR-CVM University** 

Dr. M. M. Raj (6)4)6

Principal,

**ISTAR-CVM University** 



#### INSTITUTE OF SCIENCE & TECHNOLOGY FOR ADVANCED STUDIES & RESEARCH

#### THE CHARUTAR VIDYA MANDAL UNIVERSITY





# **CERTIFICATE**

This is to certify that the project work embodied in this report entitled "SURFACE AGE ESTIMATION OF SELECTED LUNAR FEATURES USING CRATER SIZE – FREQUENCY DISTRIBUTION (CSFD) TECHNIQUE" was carried out by Ms. Tirtha Janakkumar Joshi (22301400301008) at the Geoinformatics department, Institute of Science and Technology for Advanced Studies and Research (ISTAR)-CVM University, Vallabh Vidyanagar fulfilment of the requirement for the award of M.Sc. (Geoinformatics) for the Project Work (201400401). This project work has been carried out under my guidance and it is to my satisfaction.

Dr. Krunal B. Suthar

Project Guide,

Head, P.G. Department of Geoinformatics

**ISTAR-CVM University** 

Dr. M. M. Raj

Principal,

**ISTAR-CVM University** 

# **ACKNOWLEDGEMENT**

I would like to express my heartfelt gratitude to **The CVM University** for providing a strong academic foundation and an encouraging environment that enabled me to pursue this valuable internship experience.

My sincere thanks also go to ISTAR College, where I have had the privilege of learning under the guidance of dedicated faculty members. I am especially grateful to **Principal Dr. M.M. Raj** for providing the necessary permissions and constant support throughout this journey.

A special note of appreciation goes to **Dr. Krunal B. Suthar**, Head of the Department of Geoinformatics and my internal guide, for his valuable input, timely feedback, and continuous motivation during the entire internship period.

I would also like to thank the entire **Department of Geoinformatics** and my fellow classmates at ISTAR for their academic support, encouragement, and the learning atmosphere that helped me prepare for this opportunity.

I am deeply thankful to my supervisor, **Dr. R. Phani Rajasekhar** (SCI/ENGR-SF, EPSA/PGSG/PSD), for his unwavering support, patience, and insightful guidance throughout the course of my internship. His mentorship played a crucial role in helping me gain a deeper understanding of the subject and shaped my learning journey in a significant way.

I would also like to extend my heartfelt thanks to **Sri. Satadru Bhattacharya**, Head of the Planetary Science Division, and **Dr. Sasmita Chaurasia**, Head of the Scientific Research and Training Division, for granting me the opportunity to carry out my internship at **Space Applications Centre (SAC)**, **ISRO**.

My sincere appreciation goes out to the entire team at SAC, ISRO for their friendly cooperation, supportive nature, and the intellectually stimulating environment that made this experience both enriching and memorable.

Thanking you

Ms. Tirtha Janakkumar Joshi

(22301400301008)