



INSTITUTE OF SCIENCE & TECHNOLOGY FOR ADVANCED STUDIES & RESEARCH  
ISTAR - Constituent College of CVM University  
1st Rank among All Colleges of Gujarat by KCG (GSIRF) - 2021  
Recognized under Section 2(f) and 12(B) of the UGC Act. 1956



A Project Report on  
**Land use Land cover and change  
detection urban Sprawl for  
Shivamogga City Karnataka**

*Submitted by*  
**Sachin Chittaranjan**  
(Roll no: 22GI07, Enrollment no : 22201400301007)

**Internal Guide**

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

**External Guide**

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**Academic year**  
**2023-2024**





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*Guided by:*  
**DR. KRUNAL B. SUTHAR**  
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## CERTIFICATE

This is to certify that the project work embodied in this report entitled " LAND USE AND LAND COVER AND CHANGE DETECTION URBAN SPRAWL FOR SHIVAMOGGA CITY was carried out by Mr. SACHIN CHITTARANJAN (22201400301007) 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.

*Krunal B. Suthar*  
29/4/2024

Dr. Krunal B. Suthar  
Project Guide,  
Head, P.G. Department of Geoinformatics  
ISTAR-CVM University

*M. M. Raj*  
29/4/2024  
Dr. M. M. Raj  
Principal,  
ISTAR-CVM University

PRINCIPAL  
INSTITUTE OF SCIENCE & TECHNOLOGY  
FOR ADVANCED STUDIES & RESEARCH  
(ISTAR)  
VALLABH VIDYANAGAR-388120



Ref.: SGL/HR/2024-25  
Date: 17<sup>th</sup> April, 2024

**TO WHOME IT MAT CONCERN**

This is to certify that Mr. Sachin Chittaranjan, has Successfully completed his traineeship in the field of Land use land cover and change detection urban sprawl for Shivamogga city Karnataka. from 03<sup>rd</sup> October, 2023 to 15<sup>th</sup> April, 2024. Under the guidance of Sagar Shah.

During the period of his internship program with us, he had been exposed to different process and was found diligent, hardworking and inquisitive.

We wish him every success in his life and career.

Yours Sincerely,



**Mr. Rajesh Jesani**  
Senior Executive Manager – Human Resources



## Acknowledgement:

I would like to express gratitude to Dr. Krunal Suthar my advisor and guide, for his support and guidance helpful to complete my project.

I would Like to Thank to Mr. Sagar Shah for Giving me opportunity to do an internship within the organization.

I would like to extend my appreciation to classmates who have been actively involved in brainstorming ideas and conducting experiments. Their collaborative efforts have been instrumental in the smooth execution of this project.

I would like like to express my gratitude to Principle of ISTAR College Dr. M.M. Mahendra Raj and Assistant professor Ms. Akgansha Verma to Complete this project.

I would Like to Thanks to My Friend Ishan Seth for his support and guidance throughout the Project.

**Thaking You**

**Sachin Chittaranjan(22201400301007)**