PRESIDENCY UNIVERSITY
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Geo Tagging of Land Properties Using Drones

A PROJECT REPORT

Submitted by

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Under the guidance of,

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BACHELOR OF TECHNOLOGY

IN

COMPUTER SCIENCE AND TECHNOLOGY

(AI-ML)

PRESIDENCY UNIVERSITY

BENGALURU

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PRESIDENCY SCHOOL OF COMPUTER SCIENCE AND ENGINEERING

BONAFIDE CERTIFICATE

Certified that this report "**Geo Tagging of Land Properties Using Drone**" is a Bonafide work of "Likith R - 20221CSG0001, Darshan DM – 20221CSG0058, Tharun Kumar 20221CSG0009", who have successfully carried out the project work and submitted the report for partial fulfilment of the requirements for the award of the degree of BACHELOR OF TECHNOLOGY in COMPUTER SCIENCE TECHNOLOGY, AI - ML during 2025-26.

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DECLARATION

We the students of final year B.Tech in COMPUTER SCIENCE AND TECHNOLOGY, AI-ML at Presidency University, Bengaluru, named LIKITH R, DARSHAN DM, THARUN KUMAR S, hereby declare that the project work titled **"Geo Tagging of Land Properties Using Drone"** has been independently carried out by us and submitted in partial fulfilment for the award of the degree of B.Tech in COMPUTER SCIENCE & TECHNOLOGY (AI - ML) during the academic year of 2025-26. Further, the matter embodied in the project has not been submitted previously by anybody for the award of any Degree or Diploma to any other institution.

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Abstract

Geo-tagging of land properties using drones brings a whole new dimension to conventional land surveying and property management by integrating unmanned aerial vehicles, GPS technology, and geospatial data analytics in the process. Traditional methods of mapping are bound to be time-consuming, labor-intensive, and full of human errors; drone-based geo-tagging ensures high accuracy, efficiency, and cost-effectiveness in capturing spatial information.

This project entitled "Geo Tagging of Land Properties Using Drone" aims at designing an automated system for capturing aerial imagery with GPS-enabled cameras mounted on drones and producing geo-referenced maps of land parcels. The proposed architecture will include modules such as drone navigation, image capture, extraction of coordinates, data processing, and database integration. The captured images are to be processed using photogrammetry and GIS tools to accurately demarcate the land's boundaries and identify each property with unique geographic coordinates in latitude and longitude.

It also provides real-time mapping, automated data synchronization, and storage in the cloud for easy access and verification by authorities and landowners. Experimental evaluation showed that the proposed system enhances the accuracy of land record management considerably with reduced operational time compared to conventional surveying techniques.

The project contributes to effective land administration and transparency in land ownership, smart city initiatives, and sustainable infrastructure planning with advanced geospatial intelligence supported by drone technology.

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Abbreviations

Abbreviation	Full Form
AI	Artificial Intelligence
AICTE	All India Council for Technical Education
API	Application Programming Interface
CAD	Computer-Aided Design
CNN	Convolutional Neural Network
CSV	Comma-Separated Values
DGCA	Directorate General of Civil Aviation
DILRMP	Digital India Land Records Modernization Programme
DPDPA	Digital Personal Data Protection Act
DSM	Digital Surface Model
GIS	Geographic Information System
GPS	Global Positioning System
HD	High Definition
IEEE	Institute of Electrical and Electronics Engineers
IoT	Internet of Things
LiDAR	Light Detection and Ranging
ML	Machine Learning
NDVI	Normalized Difference Vegetation Index
QGIS	Quantum Geographic Information System
RGB	Red Green Blue
SDG	Sustainable Development Goal
UAV	Unmanned Aerial Vehicle

Abbreviation	Full Form
UAS	Unmanned Aerial System
UN	United Nations
URL	Uniform Resource Locator
USB	Universal Serial Bus
Wi-Fi	Wireless Fidelity