

**FIELD AREA CALCULATION USING DRONE CAMERA:  
ALGORITHM AND FRAMEWORK DESIGN**

**A Thesis  
Submitted in partial fulfillment of the requirement for  
The Degree**

**Of**

**Master of Technology  
(Information technology)**

**Submitted**

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## CERTIFICATE

As per University Grant Commission (promotion of academic integrity and prevention of plagiarism in higher education institute) regulation 2023, dated 4 October 2023. Thesis entitled **“Field Area Calculation Using Drone Camera: Algorithm and Framework Design”** of Ms. **Ranjana Rathore (21037103)**, a student of **M. Tech (Information Technology)** IV semester has been checked by Turnitin Originality software. The amount of similarity in the progress report is 3%. The signed Turnitin Originality similarity report is attached with this thesis.



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## ABSTRACT

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Agriculture is the major backbone of the India as well as of the world to improving the livelihood the population and contributing highest GDP. Field use and Field cover (FUFC) mapping using imagery plays a vital role in any land use inventories. In this study, a hybrid feature optimization algorithm along with a Image processing is proposed to improve the performance of FAC classification helping to identify field area. Field area Calculation is one of the main tasks in the agriculture field management. Based on the result of FAC the farmer can make a better decision on the crop selection strategies for land optimization, subsequent follow-up for cultivation practices, etc. To overcome these issues, an intelligent FAC system is proposed which calculate the selected field area using Image Processing based model. Technology is advancing quickly, especially in the areas of image processing and, Drones or unmanned aerial vehicles (UAVs), which have completely changed a number of businesses. One such application is in agriculture, where precise field area calculation is essential for maximizing, resource allocation, crop yield prediction, and land management. This thesis examines the use of image processing methods on images obtained by drones for accurate field area measurement. The main goal is to provide a reliable system that can calculate the acreage of agricultural fields while overcoming obstacles such as irregular field boundaries.

**Keywords:** Drone images, image processing, OpenCv.