

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

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PROJECT REPORT

On

**“ANALYZING AND CLASSIFYING THE SOIL TYPES BY
ENHANCING 2D IMAGES”**

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**In partial fulfillment of the requirements for the degree of
BACHELOR OF ENGINEERING**

In

INFORMATION SCIENCE AND ENGINEERING

Under the Guidance of

Mr. PRADEEP NAYAK

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**DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING
ALVAS INSTITUTE OF ENGINEERING AND TECHNOLOGY**

Moodbidri-574225, Karnataka

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ALVAS INSTITUTE OF ENGINEERING AND TECHNOLOGY
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DEPARTMENT OF INFORMATION SCIENCE AND ENGINEERING
CERTIFICATE

Certified that the project work entitled "ANALYZING AND CLASSIFYING THE SOIL TYPES BY ENHANCING THE 2D IMAGES" is a bonafide work carried out by

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in partial fulfilment for the award of BACHELOR OF ENGINEERING in **INFORMATION SCIENCE AND ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELGAUM** during the year 2018-2019. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The project report has been approved as it satisfies the academic requirements in respect of project work prescribed for the Bachelor of Engineering Degree.


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ABSTRACT

Quantitative techniques for prediction and classification in soil survey are developing rapidly. Classification of soil is the dissolution to soil sets to particular group having a like characteristics and similar manners. Almost all countries do product exporting, in which those countries exporting higher agricultural product are very much depend on the soil characteristics. Thus, soil characteristics identification and classification are very much important. Identification of the soil type helps to avoid agricultural product quantity loss. A classification for engineering purpose should be based mainly on mechanical properties. This paper explains support vector machine-based classification of the soil types. Paper introduces application of Support Vector Machines in the estimate of values of soil properties and soil type classification based on known values of physical properties, texture features and color moments in sampled profiles. Soil classification includes steps like image acquisition, image pre-processing, feature extraction and classification. The texture features of soil images are extracted using the low pass filter, Gabor filter and using colour quantization technique. Mean amplitude, HSV histogram, Standard deviation are taken as the statistical parameters.