

VISVESVARAYA TECHNOLOGICAL UNIVERSITY

“Jnana Sangama” Belagavi – 590 010



PROJECT REPORT ON

**“DESIGN AND IMPLEMENTATION OF
LANDSLIDE EARLY WARNING AND
MONITORING SYSTEM”**

Submitted in partial fulfillment of the requirements for the award of degree

**BACHELOR OF ENGINEERING
IN
ELECTRONICS & COMMUNICATION ENGINEERING**

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(Affiliated to VTU, BELAGAVI)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

CERTIFICATE

Certified that the project work entitled "DESIGN AND IMPLEMENTATION OF LANDSLIDE EARLY WARNING AND MONITORING SYSTEM" is a bona fide work carried out by

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in partial fulfillment for the award of **BACHELOR OF ENGINEERING** in **ELECTRONICS & COMMUNICATION ENGINEERING** of the **VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI** during the year 2020-2021. 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.



Signature of the Guide

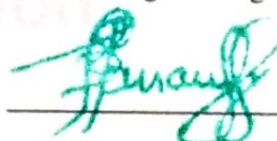
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ABSTRACT

Environmental disasters are largely unpredictable and occur within very short span of time, one of which is landslides. A landslide generally refers to the downhill movement of rock, soil, or debris. It is a high-risk phenomenon that often occurs around the globe either at small or big scale. It has been known as a natural phenomenon, but nowadays, its occurrence is more often due to human activities. Impact of landslides is a threat to human life and could destroy any existing structure or property in its path. Various factors could contribute to the occurrence of landslides, and rainfall is an inevitable triggering factor

This natural phenomenon cannot be abolished, but one can reduce the losses by an early warning system using wireless sensor networks. Early warning systems depend on a sensor node used to read different properties of slope and soil condition with particular parameters. The parameters that are received are used for the detection of downhill movement of soil, debris or rocks. However, one should replace the entire system due to the damage to the sensor node when a landslide occurs. Sensor node has IMU sensors to monitor the movement of particles and microprocessors, which are economical to manufacture and could be installed in a small space.