VISVESVARAYA TECHNOLOGICAL UNIVERSITY

"Jnana Sangama" Belagavi – 590 010

PROJECT REPORT ON

"ULTRASOUND IMAGING BASED FETAL CARDIAC CHAMBER SEGMENTATION AND DETECTION OF ABNORMALITY"

Submitted in Partial Fulfillment of the Requirements for the Award of Degree

BACHELOR OF ENGINEERING
IN
ELECTRONICS & COMMUNICATION ENGINEERING

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CERTIFICATE

Certified that the project work entitled "**ULTRASOUND IMAGING BASED FETAL CARDIAC CHAMBER SEGMENTATION AND DETECTION OF ABNORMALITY**" *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 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

A congenital heart defect is a problem with the structure of the heart. Congenital heart defects are the most common type of birth defect. The defects can found in the walls of the heart, arteries and veins of the heart. They can disrupt the normal flow of blood through the heart. The blood flow can slow down, go in the wrong direction or to the wrong place, be blocked completely. These heart defects can be identified by ultrasound scan.

An ultrasound scan, sometime called a sonogram, is a procedure that uses high frequency sound waves to create an image of part of the inside of the body. An ultrasound scan be used to monitor an unborn baby, diagnose a condition, or guide a surgeon during certain procedure. Ultrasound images are made from reflected sound, and a diagnosis can then be made.

The defects in the ultrasonic fetal cardiac images can be identified by subjecting them to a segmentation done by discrete wavelet transform which plays an important role. To overcome the problem of some unwanted noise in the ultrasonic images filter are required. For segmentation, the image is converted from RGB to gray scale images. To calculate the gestation period of the fetal, the ratio of area of left ventricle region and right ventricle region are taken. After the discrete wavelet transform, the congenital heart defects such as ventricular septal defect and atrial septal defect are identified.