

**DIGITAL IMAGE CREATION OF CONTOUR MAPPING DATA WITH
ULTRASONIC SENSOR**

By

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STATEMENT BY THE AUTHOR

I hereby declare that this submission is my own work and to the best of my knowledge, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma at any educational institution, except where due acknowledgement is made in the thesis.

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ABSTRACT

DIGITAL IMAGE CREATION OF CONTOUR MAPPING DATA WITH ULTRASONIC SENSOR

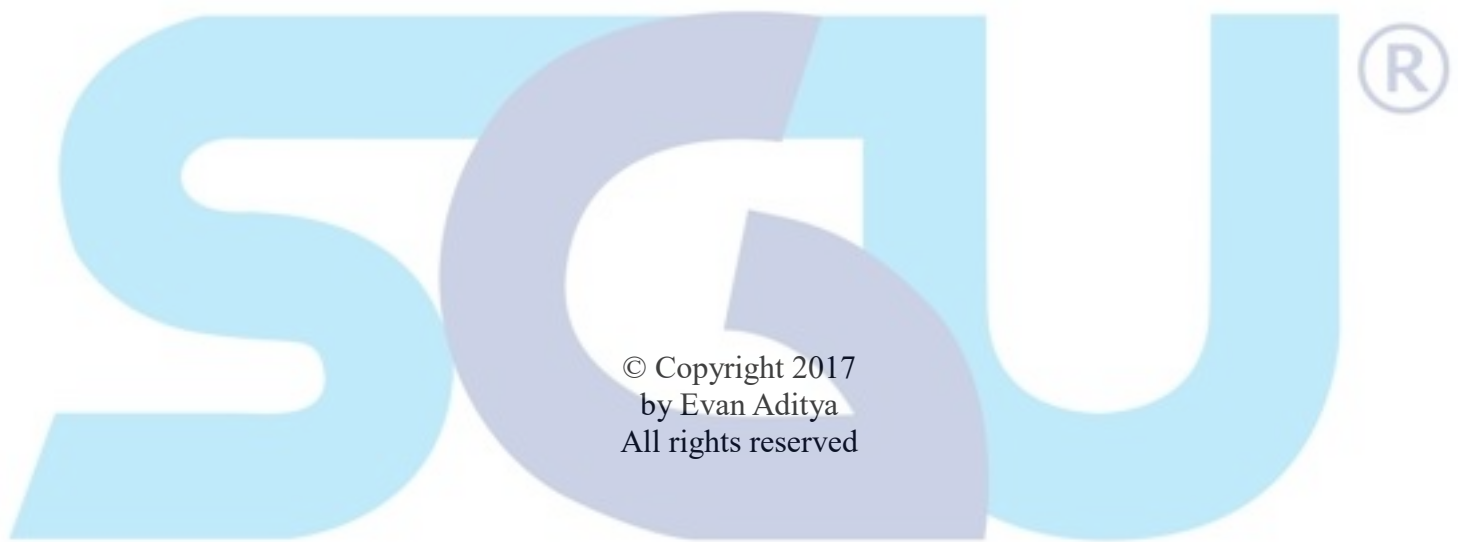
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The purpose of this thesis work is to implement the digital image creation using data from contour mapping with ultrasonic sensor. This thesis work consist of four steps: hardware design, electrical design, microcontroller programming, and digital image creation programming. Ultrasonic sensor will be mounted on stepper motor and measure the distance of surrounding object up to 500 mm while stepper motor rotate counter clockwise every 0.9° . Ultrasonic sensor measure the distance by transmitting ultrasonic soundwave from transmitter and wait until the soundwave received by receiver. After the soundwave full received, the microcontroller will count the length of soundwave and convert it into object distance. Each distance per degree data will be sent by microcontroller to computer by serial communication. All data will be stored and shown in true color image with digital image programming. One pixel in image equal to 1 millimeter in real distance. The image will show the contour of surround object with scanning step 0.9° . Distance and angle data is stored in text file. The analysis will be conducted to check the accuracy of hardware.

Keywords: Digital image creation, Contour mapping, Ultrasonic sensor, Microcontroller, Stepper motor, Transmitter, Receiver, Serial communication, Text file, True color image.



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DEDICATION

I dedicate this thesis works for my family: my mother, my father, my sister and my workplace ATMI Cikarang.



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I admit this fast track program of bachelors degree difficult to follow, but I believe this is well paid in the end and will be used in future for a good reason.

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