

# A Short Range Radar System using Arduino

**Aher Shweta Gorkshnath, Kale Tanuja Sanjay, Kahandal Varun Dilip  
Kawade Avdhoot Kishor, Padole Punam Jagannath, Prof. A. R. Kadu**

Department of Electronics and Telecommunication Engineering  
Ashok Institute of Engineering & Technology (Polytechnic), Ashoknagar, India

**Abstract:** *RADAR is a detection system that uses radio waves to determine the characteristics of the detected objects such as: range, height, direction, or the speed of objects. This paper, is aimed at designing a radar system that uses an ultrasonic sensor to detect objects. The ultrasonic sensor is used to measure the distance between the radar and any object-based non-contact technology. This system is controlled through Arduino. Arduino UNO board is sufficed to control ultrasonic sensor and also to interface the sensor and display device. Whereas, the movement of the sensor is controlled by using a small servo motor. This radar is controlled using the Arduino Uno board as a microcontroller. The signal received from the sensor is processed using "Processing Development Environment Software". Ultra-sonic sensor is attached to the servo motor it rotates about 180 degree and gives visual representation on the software called processing IDE. Processing IDE gives graphical representation and it also provides angle or position of the object and distance of the objects on the PC or monitor.*

**Keywords:** RADAR

## REFERENCES

- [1] Ahman Emmanuel Onoja, Abdusalaam Maryam Oluwadamilola, LukmanAdewale AJAO- "Embedded System Based Radio Detection and Ranging (RADAR) System Using Arduino and Ultra- Sonic Sensor" American Journal of Embedded Systems and Applications 2017.
- [2] Shreyes Mehta, ShashankTiwari-"RADAR SYSTEM USING ARDUINO AND ULTRASONIC SENSOR" IJNRD, Volume 3, Issue 4 April 2018
- [3] Antonio Tedeschi Stefano Calcaterra, Francesco Benedetto" Ultrasonic Radar System (URAS): Arduino and Virtual Reality for a Light- Free Mapping of Indoor Environments" IEEE Sensors Journal Volume: 17, Issue: 14, July15, 15 2017.
- [4] Kiruthikamani.G, Saranya B. Pandiyan P."Intelligent Driver Monitoring and Vehicle Control System" USRD-International Journal for Scientific Research & Development Vol. 5, Issue 09, 2017.
- [5] Mohanad Mahdi Abdulkareem, QusayAdil Mohammed MuhannedMahmoodShakir-"A Short Range Radar System"Rangefinder".
- [6] Harshad D. Lajurkar, Rushikesh D. Malokar, Akash N. Karmore- Currency Recognition Blind Walking Stick" JIRST International Journal for Innovative Research in Science &Technology, Volume 4 Issue 7 December 2017.
- [7] SrijanDubey, Supragya Tiwari, Simit Roy" IMPLEMENTATION OF RADAR USING ULTRASONIC SENSOR" Indian J.Sci. Res. 2017.
- [8] AnujDutt (Author), 2014, Arduino based RADAR System, Munich, GRIN Verlag, Arduino based radar system DOI: <http://dx.doi.org/10.17993/3ctecno> 2019 specialissue 14 165.
- [9] TH Nasution, EC Siagian, K Tanjung, Socharwinto-"Design of river height and speed monitoring system by using Arduino" 10th International Conference Numerical Analysis in Engineering 2018.
- [10] Syed M TahaSaquib, Sarmad Hameed, Syed M Usman Ali, Raza Jafri, Imran Amin "Wireless Control of Miniaturized Mobile Vehicle for Indoor Surveillance" ICSICST 2013 IOP Conf Series: Materials Science and Engineering.