

An Intelligent Control of Wheel Chair by Hand Gesture

P. Sujidha¹, Dr. R. Niraimathi², S. Chitra Devi³, P. Radha⁴, A.Usha⁵

Assistant Professor, Department of Electrical and Electronics Engineering^{1,4,5},

Associate Professor, Department of Electrical and Electronics Engineering^{2,3}

Mohamed Sathak Engineering College, Kilakarai, Tamil Nadu, India

Abstract: According to a research there are about 6 million populations in the world who are paralysed and needs a wheelchair for their mobility .This Paper is to develop a wheel chair for physically disabled people .The wheel chair is controlled by hand movement/hand gestures.The gestures are recognized by an accelerometer sensor .An ultrasonic sensor is used to detect the obstacles in front of the chair .The signals from the sensors are processed, and the wheel chair is controlled by Arduino micro controller.

Keywords: Gesture Control, Arduino Nano, Transmitter, Receiver, Encoder, Decoder, Ultrasonic Sensor

REFERENCES

- [1]. Prof. VishalV. Pande, "Hand Gesture Based Wheelchair Movement Control for Disabled Person Using MEMS" et al Int. Journal of Engineering Research and Applications Vol. 4, Issue 4(Version 4), April 2014, pp.152-158.
- [2]. PushpendraJha —Hand Gesture Controlled Wheelchair| International Journal of Scientific & Technology Research Volume 5, Issue 04, April 2016.
- [3]. Amundson JS, Amundson SG, "A joystick controlled wheelchair", Biomed Sci Instrum .1991; 27:131-3.
- [4]. Prof. Chitte p.p., Miss: KhemnarS.B. ,Miss: Kanawade A.A., Miss:Wakale S.B. — A hand gesture based wheelchair for physically handicapped person with emergency alert system|International Research Journal of Engineering and Technology (IRJET) Volume: 03 Issue: 04 | Apr-2016.
- [5]. Sndeep and supriya, "Wheel-Chair Control Using Accelerometer Based Gesture Technology", International Journal of Advance Research in Computer Engineering and Technology (IJARCET) Volume 4 Issue 5, May 2015.
- [6]. Y. Chen, "Application of Tilt Sensors in Human-Computer Mouse Interface for People with Disabilities|", in IEEE Transactions Neural Systems and Rehabilitation Engineering, Vol. 9, No. 3, September 2001, pp. 289–295
- [7]. V. Rajesh et al., "SEMG based human-machine interface for controlling a wheelchair by using ANN", proceedings of Control Automation Communication and Energy Conservation 2009. INCACEC 2009.2009 International Conference.
- [8]. Rajesh KannanMegalingam, Ramesh Nammily Nair, —Automated Voice based Home Navigation System for the Elderly and the Physically Challenged| Feb. 13~16, 2011
- [9]. Rajesh KannanMegalingam et al., "Wireless gesture controlled wheelchair",2017 4th International Conference on Advanced Computing and Communication Systems (ICACCS), 24 August 2017, Coimbatore, India
- [10]. Prof.Chittep.p et al., "A hand gesture based wheelchair for physically handicapped person with emergency alert system", International Research Journal of Engineering and Technology (IRJET), Volume: 03 Issue: 04, Apr-2016
- [11]. Prof. Vishal V. Pande et al., "Hand Gesture Based Wheelchair Movement Control for Disabled Person Using MEMS", Int. Journal of Engineering Research and Applications, Vol. 4, Issue 4(Version 4), April 2014, pp.152-158
- [12]. A. Murarka, M. Sridharan and B. Kuipers. 2008. "Detecting obstacles and drop-offs using stereo and motion cues for safe local motion".IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS08).



IJARSCT

Impact Factor: **6.252**

IJARSCT

ISSN (Online) 2581-9429

International Journal of Advanced Research in Science, Communication and Technology (IJARSCT)

Volume 2, Issue 1, November 2022