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Design of a Wireless Device for Monitoring Human Critical Condition at Industrial Workplace (Conference Paper)

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Abstract

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As many cases of accidents have been reported especially in industrial area, it is very crucial to take an initiative to reduce the accidents rate. The aim of this project is to design and develop an IoT device that is capable of monitoring human critical condition at industrial workplace . This device can help in giving forewarning to the person in charge about the surrounding of the worker if it is harmful for him/her. Besides, if the accident is already occurred, this device can help in reducing the time between the moment the accident happen and the moment the emergency care is taken to avoid any possible serious problem. This device uses several types of sensors to detect the surrounding temperature and air quality level, and movement of the user. The methods for developing this device is divided into three parts which is coding the microcontroller to accept the raw data, then connect the previous configuration with Wi-Fi module, and finally connect the whole previous data with web server, Thingspeak. The results succefully showed the reading from all sensors which include surrounding temperature, air quality level, normal and rotational acceleration, and emergency push button data. It is expected that this device can be one of the initiatives to help reducing the accidents rate in workplace especially in industrial area. © 2018 IEEE.

SciVal Topic Prominence

Topic: Intelligent buildings | Automation | home security

Prominence percentile: 93.740

Author keywords

Industrial work place. | IoT | Monitoring | MPU6050 | MQ135 | NodeMCU ESP8266 | Thingspeak

Indexed keywords

Engineering controlled terms: Accidents | Air quality | Condition monitoring | Monitoring

Engineering uncontrolled terms: ESP8266 | MPU6050 | MQ135 | Thingspeak | Work place

Engineering main heading: Internet of things

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References (13)

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1 Dorsemaine, B., Gaulier, J.-P., Wary, J.-P., Kheir, N., Urien, P.
Internet of Things: A Definition and Taxonomy

(2015) Proceedings - NGMAST 2015: The 9th International Conference on Next Generation Mobile Applications, Services and Technologies, art. no. 7373221, pp. 72-77. Cited 17 times.
ISBN: 978-147998660-6
doi: 10.1109/NGMAST.2015.71

View at Publisher

2 Zheng, J., Simplot-Ryl, D., Bisdikian, C., Mouftah, H.T.
The internet of things

(2011) IEEE Communications Magazine, 49 (11), art. no. 6069706, pp. 30-31. Cited 73 times.
doi: 10.1109/MCOM.2011.6069706

View at Publisher

3 Nasrin, S., Radcliffe, P.J.
Novel protocol enables DIY home automation

(2015) 2014 Australasian Telecommunication Networks and Applications Conference, ATNAC 2014, art. no. 7020900, pp. 212-216. Cited 10 times.
ISBN: 978-147995044-7
doi: 10.1109/ATNAC.2014.7020900

View at Publisher

4 (2017) Department of Occupational Safety and Health, Ministry of Human Resources Malaysia. (2017). Occupational Accidents Statistics by Sector until
July. Retrieved September 27, 2017 from
http://www.dosh.gov.my/index.php/en/occupational-accidentstatistics/by-sector

5 Carrillo-Castrillo, J.A., Rubio-Romero, J.C., Onieva, L., Carrillocastrillo, J.A., Rubio-Romero, J.C., Onieva, L.
(2016) Causation of Severe and Fatal Accidents in the Manufacturing Sector 3548, pp. 423-434.
(December)

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6 Said, S.M., Sanwari, S.R., Said, F.
Technical and scale efficiency in malaysian manufacturing industries in the presence of industrial accidents

(2013) World Applied Sciences Journal, 24 (7), pp. 862-871. Cited 3 times.
http://idosi.org/wasj/wasj24%287%2913/6.pdf
doi: 10.5829/idosi.wasj.2013.24.07.13229

View at Publisher

7 Khan, W.Z., Aalsalem, M.Y., Gharibi, W., Arshad, Q.
Oil and Gas monitoring using Wireless Sensor Networks: Requirements, issues and challenges

(2016) Proceeding - 2016 International Conference on Radar, Antenna, Microwave, Electronics, and Telecommunications, ICRAMET 2016, art. no. 7849577, pp. 31-35. Cited 7 times.
ISBN: 978-150906100-6
doi: 10.1109/ICRAMET.2016.7849577

View at Publisher

8 Ngai, E.Y.
Photovoltaic specialty materials safety

(2012) Conference Record of the IEEE Photovoltaic Specialists Conference, art. no. 6317687, pp. 619-624. Cited 3 times.
ISBN: 978-146730064-3
doi: 10.1109/PVSC.2012.6317687

View at Publisher

9 Moodbidri, A., Shahnasser, H.
Child safety wearable device

(2017) International Conference on Information Networking, art. no. 7899531, pp. 438-444.
http://www.icoin.org/
ISBN: 978-150905124-3
doi: 10.1109/ICOIN.2017.7899531

View at Publisher

10 Pyattaev, A., Johnsson, K., Andreev, S., Koucheryavy, Y.
Communication challenges in high-density deployments of wearable wireless devices

(2015) IEEE Wireless Communications, 22 (1), art. no. 7054714, pp. 12-18. Cited 49 times.
doi: 10.1109/MWC.2015.7054714

View at Publisher

11 Jatti, A., Kannan, M., Alisha, R.M., Vijayalakshmi, P., Sinha, S.
Design and development of an iot wearable device for the safety and security of women and girl children
(2016) IEEE International Conference on Recent Trends in Electronics Information Communication Technology, pp. 1108-1112. Cited 2 times.
May 20-21

12 Basanta, H., Huang, Y.-P., Lee, T.-T.
Intuitive IoT-based H2U healthcare system for elderly people

(2016) ICNSC 2016 - 13th IEEE International Conference on Networking, Sensing and Control, art. no. 7479018. Cited 8 times.
ISBN: 978-146739975-3
doi: 10.1109/ICNSC.2016.7479018

View at Publisher

13 CO Health Risks-Detect Carbon Monoxide
(n.d.)

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