

Scopus

Document details

[< Back to results](#) | 1 of 1
[Export](#)
[Download](#)
[Print](#)
[E-mail](#)
[Save to PDF](#)
[Add to List](#)
[More... >](#)
[Full Text](#)
[View at Publisher](#)

2014 IEEE International Conference on Smart Instrumentation, Measurement and Applications, ICSIMA 2014
 23 February 2015, Article number 7047438
 2014 IEEE International Conference on Smart Instrumentation, Measurement and Applications, ICSIMA 2014; Berjaya
 Hotels and Resorts Kuala LumpurKuala Lumpur; Malaysia; 25 November 2014 through ; Category numberCFP14YAG-
 ART; Code 112417

Automated person tracking using proximity capacitive sensors (Conference Paper)

 Arshad, A. [✉](#), Khan, S., Zahirul Alam, A., Tasnim, R.

 Department of Electrical and Computer Engineering, International Islamic University Malaysia, Kuala Lumpur,
 Malaysia

Abstract

[View references \(11\)](#)

A proliferating concern has been growing on the development of non-contact sensing and monitoring of human activities in health care sectors to avert accidents of elderly patients. Keeping in mind the limitations of the existing techniques, a novel sensing technique for human movement recognition has been proposed in this paper which uses capacitive proximity sensors. This paper works towards setting the stepping stone of implementing capacitive sensor for a living style profile through MATLAB simulation. The output response for various capacitance values is plotted here proving its utility for precise measurement of voltage which is proportional to the electrical properties of patient's body at the sensing elements of the sensor. The output values measures the phase shift as a depiction of human movement. With the presence of a human body near sensor, signal waveform rises at a certain frequency peak and the movement of human body away from the sensor shows otherwise. The preliminary simulation result obtains accurate phase shift variations at a point frequency which is fruitful in further studies and reaching the ultimate goal of person's movement and activity tracking. © 2014 IEEE.

Author keywords

capacitive sensing proximity sensing Simulation tracking

ISBN: 978-147998041-3

Source Type: Conference Proceeding

Original language: English

DOI: 10.1109/ICSIMA.2014.7047438

Document Type: Conference Paper

Sponsors:
Publisher: Institute of Electrical and Electronics Engineers Inc.

References (11)

[View in search results format >](#)
 All
 [Export](#)
[Print](#)
[E-mail](#)
[Save to PDF](#)
[Create bibliography](#)
 1 *HelpAge International*
<http://www.helpage.org/>

 Metrics [View all metrics >](#)

2 Citations in Scopus

70th Percentile

 0.91 Field-Weighted
 Citation Impact


PlumX Metrics

 Usage, Captures, Mentions,
 Social Media and Citations
 beyond Scopus.

Cited by 2 documents

A capacitive proximity sensing scheme for human motion detection

 Arshad, A. , Khan, S. , Alam, A.H.M.Z.
(2017) I2MTC 2017 - 2017 IEEE International Instrumentation and Measurement Technology Conference, Proceedings

Capacitance-to-voltage converter design to measure small change in capacitance produced by human body movement

 Arshad, A. , Tasnim, R. , Alam, A.H.M.Z.
(2016) 2015 IEEE International WIE Conference on Electrical and Computer Engineering, WIECON-ECE 2015
[View all 2 citing documents](#)

Inform me when this document is cited in Scopus:

[Set citation alert >](#)
[Set citation feed >](#)

Related documents

Next generation RFID-based medical service management system architecture in wireless sensor network

- 2 Biffi Gentili, G., Dori, F., Iadanza, E.
Dual-frequency active RFID solution for tracking patients in a children's hospital. Design method, test procedure, risk analysis, and technical solution

(2010) *Proceedings of the IEEE*, 98 (9), art. no. 5508336, pp. 1656-1662. Cited 14 times.
doi: 10.1109/JPROC.2010.2053330

View at Publisher
-
- 3 Wang, S.-W., Chen, W.-H., Ong, C.-S., Liu, L., Chuang, Y.-W.
RFID applications in hospitals: A case study on a demonstration RFID project in a Taiwan hospital

(2006) *Proceedings of the Annual Hawaii International Conference on System Sciences*, 8, art. no. 1579665, p. 184a. Cited 143 times.
ISBN: 0769525075; 978-076952507-5
doi: 10.1109/HICSS.2006.422

View at Publisher
-
- 4 Steele, B.G., Belza, B., Cain, K., Warms, C., Coppersmith, J., Howard, J.
Bodies in motion: Monitoring daily activity and exercise with motion sensors in people with chronic pulmonary disease

(2003) *Journal of Rehabilitation Research and Development*, 40 (5 SUPPL. 2), pp. 45-58. Cited 101 times.

View at Publisher
-
- 5 Karlsson, Nils, Jarrhed, Jan-Ove
Capacitive sensor for the detection of humans in a robot cell

(1993) *Conference Record - IEEE Instrumentation and Measurement Technology Conference*, pp. 164-166. Cited 22 times.
ISBN: 0780312295

View at Publisher
-
- 6 Alan, C.
(2006) *Cell Phone Gps Tracking*
EzineArticles 09 March. 12 August 2007
-
- 7 Ubiquitous healthcare: The onkonet mobile agents architecture
Proceeding Workshop on Mobile Computing in Medicine, pp. 105-118.
-
- 8 Krumm, J., Williams, L., Smith, G.
SmartmoveX on a graph – An inexpensive active badge tracker

(2002) *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, 2498, pp. 299-307. Cited 24 times.
<http://springerlink.com/content/0302-9743/copyright/2005/>
ISBN: 3540442677; 978-354044267-7

View at Publisher

Tolentino, R.S. , Lee, K. , Kim, Y.-T.

(2010) *Communications in Computer and Information Science*

Collision avoidance of industrial robot arms using an invisible sensitive skin

Lam, T.L. , Yip, H.W. , Qian, H.
(2012) *IEEE International Conference on Intelligent Robots and Systems*

Capacitive detection of humans for safety in industry - A numerical and experimental investigation

Båvall, L. , Karlsson, N.
(1998) *Measurement Science and Technology*

View all related documents based on references

Find more related documents in Scopus based on:

Authors > Keywords >

-
- 9 Focken, D., Stiefelhagen, R.
Towards vision-based 3-D people tracking in a smart room

(2002) *Proceedings - 4th IEEE International Conference on Multimodal Interfaces, ICMI 2002*, art. no. 1167028, pp. 400-405. Cited 66 times.
ISBN: 0769518346; 978-076951834-3
doi: 10.1109/ICMI.2002.1167028

[View at Publisher](#)
-
- 10 Mittal, A., Davis, L.S.
M2 tracker: A multi-view approach to segmenting and tracking people in a cluttered scene using region-based stereo
(2002) *European Conference on Computer Vision*. Cited 36 times.
-
- 11 Ng, K.C., Ishiguro, H., Trivedi, M., Sogo, T.
An integrated surveillance system-human tracking and view synthesis using multiple omni-Directional Vision Sensors
(2002) *Image and Vision Computing Journal*. Cited 2 times.
June
-

© Copyright 2015 Elsevier B.V., All rights reserved.

[< Back to results](#) | 1 of 1

[^ Top of page](#)

About Scopus

[What is Scopus](#)
[Content coverage](#)
[Scopus blog](#)
[Scopus API](#)
[Privacy matters](#)

Language

[日本語に切り替える](#)
[切换到简体中文](#)
[切换到繁體中文](#)
[Русский язык](#)

Customer Service

[Help](#)
[Contact us](#)

ELSEVIER

[Terms and conditions](#) [Privacy policy](#)

Copyright © 2017 Elsevier B.V. All rights reserved. Scopus® is a registered trademark of Elsevier B.V.

Cookies are set by this site. To decline them or learn more, visit our [Cookies page](#).

 RELX Gr