

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](#)

IECBES 2014, Conference Proceedings - 2014 IEEE Conference on Biomedical Engineering and Sciences: "Miri, Where Engineering in Medicine and Biology and Humanity Meet"
 23 February 2015, Article number 7047581, Pages 634-638
 3rd IEEE Conference on Biomedical Engineering and Sciences, IECBES 2014; Kuala Lumpur; Malaysia; 8 December 2014 through 10 December 2014; Category numberCFP1426K-ART; Code 111205

Design and implementation of an inductive-based human postures recognition system (Conference Paper)

Labarni, S. [✉](#), Khan, S. [✉](#), Nordin, A.N. [✉](#)

ECE Department, Faculty of Engineering, International Islamic University, Kuala Lumpur, Malaysia

Abstract

[View references \(10\)](#)

This paper describes the design and implementation of an inductive-based human postures recognition system during Muslim prayers or 'Solat'. Inductive sensors are preferred over contact sensors as they allow remote detection of postures. An array of inductive sensors are placed underneath a prayer mat to sense four different postures namely Woquf, Rokoo, Sojod and Qood. Each inductive proximity sensor comprises of a modified inductive loop, with inner and outer loops and three capacitors. The design of the sensing circuit was simulated using both MATLAB and Multisim. Nine identical sensors, with each sensor placed on a different zone on the prayer mat, are connected in parallel to a ChipKit Max32 development board. The sensors send analog signals that are digitized by the board and sent to a PC as frequency plots. Posture identification was done by analyzing the triggered zones. Experimental results are in agreement with both the analytical and simulation results and can successfully distinguish the different postures remotely. © 2014 IEEE.

Author keywords

inductive detection Inductive loop inductive loop based detection inductive sensing technique

Indexed keywords

Engineering Biomedical engineering Design MATLAB Proximity sensors

controlled terms:

Analog signals
 Chipkit max32
 Design and implementations
 Human postures recognition
 Inductive loops
 Inductive sensing
 Remote detection
 Sensing circuits

Engineering main heading: Inductive sensors

Metrics

0 Citations in Scopus

0 Field-Weighted Citation Impact



PlumX Metrics

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

Cited by 0 documents

Inform me when this document is cited in Scopus:

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

Related documents

Inductive loops for sensing position as signature signals

Labarni, S. , Malik, N.A. , Nordin, A.N.

(2013) *IOP Conference Series: Materials Science and Engineering*

A qualitative review for wireless health monitoring system

Arshad, A. , Ismail, A.F. , Khan, S. (2013) *IOP Conference Series: Materials Science and Engineering*

Transforming human gait for signature signals characterization

Arshad, A. , Ismail, A.F. , Khan, S. (2013) *IOP Conference Series: Materials Science and Engineering*

[View all related documents based on references](#)



Find more related documents in Scopus based on:

ISBN: 978-147994084-4
Source Type: Conference
Proceeding
Original language: English

DOI: 10.1109/IECBES.2014.7047581
Document Type: Conference Paper
Sponsors: Silterra, University of Malaya
Publisher: Institute of Electrical and Electronics
Engineers Inc.

References (10)

[View in search results format >](#)

All | [Export](#)  [Print](#)  [E-mail](#) [Save to PDF](#) [Create bibliography](#)

- 1 Mastorakis, G., Makris, D.
Fall detection system using Kinect's infrared sensor
(2012) *Journal of Real-Time Image Processing*, pp. 1-12. Cited 26 times.
-
- 2 Ibrahim, F., Ahmad, S.A., Woo, P.J., Wan, W.A.B.A.
Biomechanical response of the upper body during prostration in salat and the child's pose: A preliminary study
(2012) *Journal of Physical Therapy Science*, 24 (10), pp. 1021-1024. Cited 3 times.
https://www.jstage.jst.go.jp/article/jpts/24/10/24_JPTS-2012-180/_pdf
doi: 10.1589/jpts.24.1021
[View at Publisher](#)
-
- 3 Ibrahim, F., Sian, T.C., Shanggar, K., Razack, A.H.
Muslim prayer movements as an alternative therapy in the treatment of erectile dysfunction: A preliminary study
(2013) *Journal of Physical Therapy Science*, 25 (9), pp. 1087-1091. Cited 4 times.
https://www.jstage.jst.go.jp/article/jpts/25/9/25_jpts-2013-071/_pdf
doi: 10.1589/jpts.25.1087
[View at Publisher](#)
-
- 4 Doufesh, H., Ibrahim, F., Ismail, N.A., Wan Ahmad, W.A.
Effect of Muslim Prayer (Salat) on α Electroencephalography and Its Relationship with Autonomic Nervous System Activity
(2014) *Journal of Alternative and Complementary Medicine*, 20 (7), pp. 558-562. Cited 6 times.
www.liebertonline.com/acm
doi: 10.1089/acm.2013.0426
[View at Publisher](#)
-
- 5 Janusz, G., Sroka, R., Stencel, M.
A vehicle classification based on inductive loop detectors
(2001) *IEEE Transactions on Instrumentation and Measurement*
MAY 21-23
-
- 6 George, B., Zangl, H., Bretterkieber, T., Brasseur, G.
A combined inductivecapacitive proximity sensor for seat occupancy detection
(2010) *IEEE Transactions on Instrumentation and Measurement*, 59 (5), art. no. 5439846, pp. 1463-1470. Cited 35 times.
doi: 10.1109/TIM.2010.2040910
[View at Publisher](#)

- 7 Sheik Mohammed Ali, S., George, B., Vanajakshi, L., Venkatraman, J.
A multiple inductive loop vehicle detection system for heterogeneous and lane-less traffic
 (2012) *IEEE Transactions on Instrumentation and Measurement*, 61 (5), art. no. 6095626, pp. 1353-1360. Cited 25 times.
 doi: 10.1109/TIM.2011.2175037
[View at Publisher](#)
-
- 8 Ali, S.S.M., George, B., Vanajakshi, L.
A magnetically coupled inductive loop sensing system for less-lane disciplined traffic
 (2012) *2012 IEEE I2MTC - International Instrumentation and Measurement Technology Conference, Proceedings*, art. no. 6229512, pp. 827-832. Cited 10 times.
 ISBN: 978-145771771-0
 doi: 10.1109/I2MTC.2012.6229512
[View at Publisher](#)
-
- 9 Perkins, M.P., Ong, M.M., Speer, R.D., Brown, C.G.
Analysis of a small loop antenna with inductive coupling to nearby loops
 (2011) *IEEE Transactions on Electromagnetic Compatibility*, 53 (4), art. no. 5771090, pp. 900-908. Cited 3 times.
 doi: 10.1109/TEM.2011.2143718
[View at Publisher](#)
-
- 10 Bera, S.C., Mandal, N., Sarkar, R.
Study of a pressure transmitter using an improved inductance bridge network and bourdon tube as transducer
 (2011) *IEEE Transactions on Instrumentation and Measurement*, 60 (4), art. no. 5648348, pp. 1453-1460. Cited 15 times.
 doi: 10.1109/TIM.2010.2090697
[View at Publisher](#)

© 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