

Web of Science

Search

Search Results

My Tools

Search History

Marked List

Look Up Full Text



Save to EndNote online

Add to Marked List

1 of 1

Development of an intelligent e-healthcare system for the domestic care industryBy: [Wong, BN](#) (Wong, Bennie)^[1]; [Ho, GTS](#) (Ho, G. T. S.)^[1]; [Tsui, E](#) (Tsui, Eric)^[1]**INDUSTRIAL MANAGEMENT & DATA SYSTEMS**

Volume: 117 Issue: 7 Pages: 1426-1445

DOI: 10.1108/IMDS-08-2016-0342

Published: 2017

[View Journal Impact](#)**Abstract**

Purpose - In view of the elderly caregiving service being in high demand nowadays, the purpose of this paper is to develop an intelligent e-healthcare system for the domestic care industry by using the Internet of Things (IoTs) and Fuzzy Association Rule Mining (FARM) approach.

Design/methodology/approach - The IoTs connected with the e-healthcare system collect real-time vital sign monitoring data for the e-healthcare system. The FARM approach helps to identify the hidden relationships between the data records in the e-healthcare system to support the elderly care management tasks.

Findings - To evaluate the proposed system and approach, a case study was carried out to identify the association between the specific collected demographic data, behavior data and the health measurements data in the e-healthcare system. It is found that the discovered rules are useful for the care management tasks in the elderly healthcare service.

Originality/value - Knowledge discovery in databases uses various data mining techniques and rule-based artificial intelligence algorithms. This paper demonstrates complete processes on how an e-healthcare system connected with IoTs can support the elderly care services via a data collection phase, data analysis phase and data reporting phase by using the FARM to evaluate the fuzzy sets of the data attributes. The caregivers can use the discovered rules for proactive decision support of healthcare services and to improve the overall service quality by enhancing the elderly healthcare service responsiveness.

Keywords

Author Keywords: [Internet of Things](#); [e-Healthcare system](#); [Elderly care service](#) [Fuzzy Association Rule Mining](#)

KeyWords Plus: [ASSOCIATION RULES](#); [SCALE](#)

Author Information

Reprint Address: Wong, BN (reprint author)

Hong Kong Polytech Univ, Dept Ind & Syst Engr, Hong Kong, Hong Kong, Peoples R China.

Organization-Enhanced Name(s)

Hong Kong Polytechnic University

Addresses:

[1] Hong Kong Polytech Univ, Dept Ind & Syst Engr, Hong Kong, Hong Kong, Peoples R China

Organization-Enhanced Name(s)

Hong Kong Polytechnic University

E-mail Addresses: benniewong@gmail.com

Funding

Funding Agency	Grant Number

Citation Network

0 Times Cited

[29 Cited References](#)[View Related Records](#)

Create Citation Alert

*(data from Web of Science Core Collection)***All Times Cited Counts**

0 in All Databases

0 in Web of Science Core Collection

0 in BIOSIS Citation Index

0 in Chinese Science Citation Database

0 in Data Citation Index

0 in Russian Science Citation Index

0 in SciELO Citation Index

Usage Count

Last 180 Days: 2

Since 2013: 2

[Learn more](#)**This record is from:**

Web of Science Core Collection
- Science Citation Index Expanded

Suggest a correction

If you would like to improve the quality of the data in this record, please [suggest a correction](#).

Department of Industrial and Systems Engineering of the Hong Kong Polytechnic University

[View funding text](#)

Publisher

EMERALD GROUP PUBLISHING LTD, HOWARD HOUSE, WAGON LANE, BINGLEY BD16 1WA, W YORKSHIRE, ENGLAND

Categories / Classification

Research Areas: Computer Science; Engineering

Web of Science Categories: Computer Science, Interdisciplinary Applications; Engineering, Industrial

Document Information

Document Type: Article

Language: English

Accession Number: WOS:000407448800008

ISSN: 0263-5577

eISSN: 1758-5783

Journal Information

Impact Factor: [Journal Citation Reports](#)

Other Information

IDS Number: FD3QZ

Cited References in Web of Science Core Collection: **29**

Times Cited in Web of Science Core Collection: **0**

Web of Science

Search

Search Results

My Tools ▾

Search History

Marked List

Cited References: 29

(from Web of Science Core Collection)

From: Development of an intelligent e-healthcare system for the domestic care industry ...[More](#)

Page 1 of 1

 Select Page

Save to EndNote online

Add to Marked List

[Find Related Records >](#)

1. **Causal Association Mining for Detection of Adverse Drug Reactions**
By: Abin, Deepa; Mahajan, Tanushree C.; Bhoj, Manali S.; et al.
Book Group Author(s): IEEE
Conference: First International Conference on Computing Communication Control and Automation (ICCUBEA)* Location: Pune, INDIA Date: FEB 26-27, 2015
Sponsor(s): Savitribai Phule Pune University; Indian Society for Technical Education; Quality Circle Forum of India; Pimpri Chinchwad College of Engineering; IEEE Pune Section
1ST INTERNATIONAL CONFERENCE ON COMPUTING COMMUNICATION CONTROL AND AUTOMATION ICCUBEA 2015
Pages: 382+ Published: 2015
[View Abstract](#)
- Times Cited: 1**
(from Web of Science Core Collection)
2. **Elderly people health monitoring system using fuzzy rule based approach**
By: Ayman, M. M.; Mohammad, O. A.; Bilal, H.
International Journal of Advanced Computer Research Volume: 4 Issue: 17 Pages: 904-914 Published: 2014
Times Cited: 1
(from Web of Science Core Collection)
3. **The influence of obesity, alcohol abuse, and smoking on utilization of health care services**
By: Azari, K. D. B. R.
Fam Med Health Services Research Volume: 38 Issue: 6 Pages: 427-434 Published: 2006
Times Cited: 1
(from Web of Science Core Collection)
4. **Fuzzy association rule mining approaches for enhancing prediction performance**
By: Bilal, Sowan; Keshav, Dahal; Hossain, M. A.
Expert Systems with Applications Volume: 40 Issue: 17 Pages: 6928-6937 Published: 2013
Times Cited: 2
(from Web of Science Core Collection)
5. **In-hospital mortality and morbidity of elderly medical patients can be predicted at admission by the Modified Early Warning Score: a prospective study**
By: Cei, M.; Bartolomei, C.; Mumoli, N.
INTERNATIONAL JOURNAL OF CLINICAL PRACTICE Volume: 63 Issue: 4 Pages: 591-595 Published: APR 2009
[Full Text from Publisher](#) [View Abstract](#)
- Times Cited: 46**
(from Web of Science Core Collection)
6. Title: [not available]
Group Author(s): Census and Statistics Department
Pattern of smoking (Hong Kong) Published: 2015
accessed January 31, 2016
Times Cited: 1
(from Web of Science Core Collection)
7. Title: [not available]
Group Author(s): Census and Statistics Department
Population aged 15 by educational attainment and sex (Hong Kong) Published: 2016
accessed January 31, 2016
Times Cited: 1
(from Web of Science Core Collection)
8. **Efficient mining of association rules for the early diagnosis of Alzheimer's disease**
By: Chaves, R.; Gorriz, J. M.; Ramirez, J.; et al.
PHYSICS IN MEDICINE AND BIOLOGY Volume: 56 Issue: 18 Pages: 6047-6063 Published: SEP 21 2011
[View Abstract](#)
- Times Cited: 12**
(from Web of Science Core Collection)
9. Title: [not available]
Group Author(s): Centre for Health Protection
Statistics on behavioural risk factors Published: 2014
accessed March 31, 2016
Times Cited: 1
(from Web of Science Core Collection)

10. Title: [not available]
Group Author(s): Centre for Health Protection
Statistics on behavioural risk factors Published: 2010
accessed February 29, 2016
- Times Cited: 2**
(from Web of Science Core Collection)
11. Title: [not available]
Group Author(s): Department of Health and Human Services
Norton pressure sore risk assessment scale scoring system
accessed February 2016
- Times Cited: 1**
(from Web of Science Core Collection)
12. Title: [not available]
Group Author(s): Financial Secretary's Office HKSAR
Third quarter economic report 2013 Published: 2013
accessed August 1, 2016
- Times Cited: 1**
(from Web of Science Core Collection)
- 13. **Using a fuzzy association rule mining approach to identify the financial data association**
By: Ho, G. T. S.; Ip, W. H.; Wu, C. H.; et al.
EXPERT SYSTEMS WITH APPLICATIONS Volume: 39 Issue: 10 Pages: 9054-9063 Published: AUG 2012
- [Full Text from Publisher](#) [View Abstract](#)
- Times Cited: 13**
(from Web of Science Core Collection)
- 14. **Fuzzy data mining for interesting generalized association rules**
By: Hong, TP; Lin, KY; Wang, SL
FUZZY SETS AND SYSTEMS Volume: 138 Issue: 2 Pages: 255-269 Article Number: PII S0165-0114(03)00272-5
Published: SEP 1 2003
- [Full Text from Publisher](#) [View Abstract](#)
- Times Cited: 83**
(from Web of Science Core Collection)
- 15. **Efficient Data Mining Method to Predict the Risk of Heart Diseases through Frequent Itemsets**
By: Ilayaraja, M.; Meyyappan, T.
Edited by: Mathew, J; Singh, AK
Conference: 4th International Conference on Eco-Friendly Computing and Communication Systems (ICECCS) Location: Natl Inst Technol, Kurukshetra, INDIA Date: DEC 07-08, 2015
PROCEEDINGS OF THE 4TH INTERNATIONAL CONFERENCE ON ECO-FRIENDLY COMPUTING AND COMMUNICATION SYSTEMS Book Series: Procedia Computer Science Volume: 70 Pages: 586-592 Published: 2015
- [Full Text from Publisher](#) [View Abstract](#)
- Times Cited: 2**
(from Web of Science Core Collection)
16. **Use of cumulative information estimations for risk assessment of heart failure patients**
By: Jan, B.; Kambhampati, C.; Darryl, N. D.; Cleland, J. G. F.
Conference: IEEE International Conference on Fuzzy Systems
IEEE INT C FUZZ SYST Pages: 1402-1407 Published: 2014
[\[Hide additional data\]](#)
- Times Cited: 1**
(from Web of Science Core Collection)
- 17. **Reliability and validity of the Multidimensional Health Locus of Control Scale in Japan: Relationship with demographic factors and health-related behavior**
By: Kuwahara, A; Nishino, Y; Ohkubo, T; et al.
TOHOKU JOURNAL OF EXPERIMENTAL MEDICINE Volume: 203 Issue: 1 Pages: 37-45 Published: MAY 2004
- [Full Text from Publisher](#) [View Abstract](#)
- Times Cited: 41**
(from Web of Science Core Collection)
18. **Fuzzy association rule mining for fashion product development**
By: Lee, C. K. H.; Tse, Y. K.; Ho, G. T. S.; et al.
Industrial Management & Data Systems Volume: 115 Issue: 2 Published: 2015
[\[Show additional data\]](#)
- Times Cited: 1**
(from Web of Science Core Collection)
- 19. **ds Using fuzzy association rule mining in cancer classification**
By: Mahmoodian, Hamid; Marhaban, M. Hamiruce; Abdulrahim, Raha; et al.
AUSTRALASIAN PHYSICAL & ENGINEERING SCIENCES IN MEDICINE Volume: 34 Issue: 1 Pages: 41-54 Published: APR 2011
- [View Abstract](#)
- Times Cited: 5**
(from Web of Science Core Collection)
20. **Health and nursing problems of elderly patients related to bio-psycho-social need deficiencies and functional assessment**
By: Marta, M.; Ate, D.; Kornelia, K.-K.; et al.
Archives of Gerontology and Geriatrics Volume: 55 Issue: 1 Pages: 190-194 Published: 2012
[\[Show additional data\]](#)
- Times Cited: 1**
(from Web of Science Core Collection)

21. **Application of Fuzzy association rule mining for analysis students academic performance**
By: Olufunke, O. O.; Olanrewaju, J. O.; Aborisade, D. O.
International Journal of Computer Science Volume: 9 Issue: 7 Pages: 216-223 Published: 2012
Times Cited: 1
(from Web of Science Core Collection)
22. **The World Health Organization Study on global AGEing and adult health**
By: Paul, K.; Chatterji, S.; Naidoo, N.; et al.
Group Author(s): the SAGE Collaborators
International Journal of Epidemiology Volume: 41 Issue: 6 Pages: 1639-1649 Published: 2012
[Show additional data]
Times Cited: 1
(from Web of Science Core Collection)
- 23. **Norton scale for predicting prognosis in elderly patients undergoing trans-catheter aortic valve implantation: A historical prospective study**
By: Rabinovitz, Edith; Finkelstein, Ariel; Ben Assa, Eyal; et al.
JOURNAL OF CARDIOLOGY Volume: 67 Issue: 5-6 Pages: 519-525 Published: MAY-JUN 2016
[Full Text from Publisher] [View Abstract]
Times Cited: 2
(from Web of Science Core Collection)
24. Title: [not available]
Group Author(s): Social Welfare Department
Old age living allowance (Hong Kong) Published: 2014
accessed March 31, 2016
Times Cited: 1
(from Web of Science Core Collection)
25. **Using associative classifiers for predictive analysis in health care data mining**
By: Sunita, S.; Vyas, O. P.
International Journal of Computer Applications Volume: 4 Issue: 5 Pages: 33-37 Published: 2010
Times Cited: 1
(from Web of Science Core Collection)
26. **IoT as a service system for eHealth**
By: Swiatek, P.; Rucinski, A.
IEEE e-Health Networking, Applications & Services (Healthcom) Pages: 81-84 Published: 2013
Times Cited: 1
(from Web of Science Core Collection)
27. **The value of modified early warning score (MEWS) in surgical in-patients: a prospective observational study**
By: Thorpe, J. G.; Love, N.; Wrightson, J.; et al.
US National Library of Medicine Volume: 88 Issue: 6 Pages: 571-575 Published: 2006
[Show additional data]
Times Cited: 1
(from Web of Science Core Collection)
28. **A proposed architectural model for vital sign monitoring system**
By: Vishakha, D.; Sanjeev, W.
Conference: IEEE ICCSP Conference
IEEE ICCSP C Pages: 1758-1762 Published: 2015
Times Cited: 1
(from Web of Science Core Collection)
- 29. **A Health-IoT Platform Based on the Integration of Intelligent Packaging, Unobtrusive Bio-Sensor, and Intelligent Medicine Box**
By: Yang, Geng; Xie, Li; Mantysalo, Matti; et al.
IEEE TRANSACTIONS ON INDUSTRIAL INFORMATICS Volume: 10 Issue: 4 Pages: 2180-2191 Published: NOV 2014
[View Abstract]
Times Cited: 52
(from Web of Science Core Collection)

□ Select Page



Save to EndNote online

Add to Marked List