



< Back to results | 1 of 1

Download Print E-mail Save to PDF Add to List More... >

Full Text

International Journal of Advanced Computer Science and Applications • Open Access • Volume 11, Issue 12, Pages 269 - 276 •
1 December 2020

Document type

Article • Gold Open Access

Source type

Journal

ISSN

2158107X

DOI

10.14569/IJACSA.2020.0111234

Publisher

Science and Information Organization

Original language

English

View less ^

iDietScore™: Meal recommender system for athletes and active individuals

Mustafa, Norashikin^{a, b}; Abd Rahman, Abdul Hadi^c; Sani, Nor Samsiah^c; Mohamad, Mohd Izham^e; Zakaria, Ahmad Zawawi^d; Ahmad, Azimah^e; Yatiman, Noor Hafizah^f; Talib, Ruzita Abd^f; Koon, Poh Bee^f; Safi, Nik Shanita^g

Save all to author list

^a Faculty of Health Sciences, Universiti Kebangsaan Malaysia, Kuala Lumpur, Malaysia

^b Department of Nutrition, Kulliyah of Allied Health Sciences, International Islamic University Malaysia, Kuantan, Malaysia

^c Center for Artificial Intelligence Technology, Universiti Kebangsaan Malaysia, Bangi, Malaysia

^d National Sport Institute, Kuala Lumpur, Malaysia

View additional affiliations ▾

45th percentile
Citations in Scopus

0.56
FWCI

38
Views count

View all metrics >

View PDF Full text options ▾ Export ▾

Abstract

Author keywords

Indexed keywords

SciVal Topics

Metrics

Funding details

Cited by 4 documents

Predicting risk of obesity and meal planning to reduce the obese in adulthood using artificial intelligence

Kaur, R. , Kumar, R. , Gupta, M. (2022) *Endocrine*

Food Image-based diet recommendation framework to overcome PCOS problem in women using deep convolutional neural network

Kaur, R. , Kumar, R. , Gupta, M. (2022) *Computers and Electrical Engineering*

Users' Perspective on the AI-Based Smartphone PROTEIN App for Personalized Nutrition and Healthy Living: A Modified Technology Acceptance Model (mTAM) Approach

Dias, S.B. , Oikonomidis, Y. , Diniz, J.A. (2022) *Frontiers in Nutrition*

View all 4 citing documents

Inform me when this document is cited in Scopus:

Set citation alert >

Related documents

Blockchain-Secured Recommender System for Special Need Patients Using Deep Learning

Mantey, E.A. , Zhou, C. , Anajemba, J.H. (2021) *Frontiers in Public Health*

A Health-Awareness Nutrition Recommender System

Toledo, R.Y. , Martinez, L. (2019) *Proceedings of IEEE 14th International Conference on Intelligent Systems and Knowledge Engineering, ISKE 2019*

Semantically enhanced case adaptation for dietary menu recommendation of diabetic patients

Yusof, N.M. , Noah, S.A.M. (2017) *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*

View all related documents based on references

Abstract

—Individualized meal planning is a nutrition counseling strategy that focuses on improving food behavior changes. In the sports setting, the number of experts who are sports dietitians or nutritionists (SD/SN) is small in number, and yet the demand for creating meal planning for a vast number of athletes often cannot be met. Although some food recommender system had been proposed to provide healthy menu planning for the general population, no similar solution focused on the athlete's needs. In this study, the iDietScore™ architecture was proposed to give athletes and active individuals virtual individualized meal planning based on their profile, includes energy and macronutrients requirement, sports category, age group, training cycles, training time and individual food preferences. Knowledge acquisition on the expert domain (the SN) was conducted prior to the system design through a semi-structured interview to understand meal planning activities' workflow. The architecture comprises: (1) iDietScore™ web for SN/SD, (2) mobile application for athletes and active individuals and (3) expert system. SN/SD used the iDietScore™ web to develop a meal plan and initiate the compilation meal plan database for further use in the expert system. The user used iDietScore™ mobile app to receive the virtual individualized meal plan. An inference-based expert system was applied in the current study to generate the meal plan recommendation and meal reconstruction for the user. Further research is necessary to evaluate the prototype's usability by the target user (athletes and active individuals). © 2020 Science and Information Organization. All rights reserved.

Find more related documents in Scopus based on:

Authors > Keywords >


Author keywords

Design; Development; Inference engine; Meal planning; Sports nutrition; —Expert system

Indexed keywords 

SciVal Topics  

Metrics 

Funding details 

References (41)

[View in search results format >](#)

All

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

- 1 Thomas, D.T., Erdman, K.A., Burke, L.M.
Position of the Academy of Nutrition and Dietetics, Dietitians of Canada, and the American College of Sports Medicine: Nutrition and Athletic Performance

(2016) *Journal of the Academy of Nutrition and Dietetics*, 116 (3), pp. 501-528. Cited 569 times.

http://www.elsevier.com/ups/find/journaldescription.cws_home/727057/description#description

doi: 10.1016/j.jand.2015.12.006

[View at Publisher](#)

- 2 Stellingwerff, T., Morton, J.P., Burke, L.M.
A framework for periodized nutrition for athletics ([Open Access](#))

(2019) *International Journal of Sport Nutrition and Exercise Metabolism*, 29 (2), pp. 141-151. Cited 42 times.

<https://journals.humankinetics.com/doi/abs/10.1123/ijsnem.2018-0305>

doi: 10.1123/ijsnem.2018-0305

[View at Publisher](#)

- 3 Tumnark, P., Vilas-boas, J. P., Cardoso, P., Cabral, J.
Ontology-Based Personalized Dietary Recommendation for Weightlifting
Ontology-Based Personalized Dietary Recommendation for Weightlifting
(2014) *Int. Work. Comput. Sci. Sport*
December
-
- 4 Dwyer, J., Eisenberg, A., Prelack, K., Song, W.O., Sonnevile, K., Ziegler, P.
Eating attitudes and food intakes of elite adolescent female
figure skaters: A cross sectional study ([Open Access](#))

(2012) *Journal of the International Society of Sports Nutrition*, 9, art. no.
53. Cited 14 times.
<http://www.jissn.com/content/9/1/53>
doi: 10.1186/1550-2783-9-53

View at Publisher
-
- 5 Jagim, A. R., Zabriskie, H., Currier, B., Harty, P. S., Stecker, R., Kerksick, C. M.
(2019) *Nutrient Status and perceptions of energy and macronutrient intake in
a Group of Collegiate Female Lacrosse Athletes*, 7, pp. 1-7.
-
- 6 Jenner, S. L., Buckley, G. L., Belski, R., Devlin, B. L., Forsyth, A. K.
Team Sport Athletes Do Not Meet Sport Nutrition Recommendations
(2019) *A Systematic Literature Review*, (3), pp. 1-16. Cited 2 times.
-
- 7 Jenner, S.L., Trakman, G., Coutts, A., Kempton, T., Ryan, S., Forsyth, A., Belski,
R.
Dietary intake of professional Australian football athletes
surrounding body composition assessment ([Open Access](#))

(2018) *Journal of the International Society of Sports Nutrition*, 15 (1), art. no.
43. Cited 37 times.
<http://www.jissn.com/>
doi: 10.1186/s12970-018-0248-5

View at Publisher
-
- 8 Noll, M., De Mendonça, C.R., De Souza Rosa, L.P., Silveira, E.A.
Determinants of eating patterns and nutrient intake among
adolescent athletes: A systematic review ([Open Access](#))

(2017) *Nutrition Journal*, 16 (1), art. no. 46. Cited 27 times.
<http://www.nutritionj.com/home/>
doi: 10.1186/s12937-017-0267-0

View at Publisher
-
- 9 Spahn, J.M., Reeves, R.S., Keim, K.S., Laquatra, I., Kellogg, M., Jortberg,
B., Clark, N.A.
State of the Evidence Regarding Behavior Change Theories
and Strategies in Nutrition Counseling to Facilitate Health
and Food Behavior Change

(2010) *Journal of the American Dietetic Association*, 110 (6), pp. 879-
891. Cited 234 times.
doi: 10.1016/j.jada.2010.03.021

View at Publisher
-
- 10 Boushey, C. J., Coulston, A. M., Rock, C. L., Mosen, E.
(2001) *Nutrition in the prevention and treatment of disease*. Cited 78 times.
Academic Press

-
- 11 Mirtschin, J.G., Forbes, S.F., Cato, L.E., Heikura, I.A., Strobel, N., Hall, R., Burke, L.M.
Organization of dietary control for nutrition-training intervention involving periodized carbohydrate availability and ketogenic low-carbohydrate high-fat diet ([Open Access](#))
- (2018) *International Journal of Sport Nutrition and Exercise Metabolism*, 28 (5), pp. 480-489. Cited 15 times.
<https://journals.humankinetics.com/doi/pdf/10.1123/ijsnem.2017-0249>
doi: 10.1123/ijsnem.2017-0249
- [View at Publisher](#)
-
- 12 Chen, W. K.
(2004) *The electrical engineering handbook*. Cited 62 times.
United States of America: Elsevier Academic Press
-
- 13 Alian, S., Li, J., Pandey, V.
A Personalized Recommendation System to Support Diabetes Self-Management for American Indians ([Open Access](#))
- (2018) *IEEE Access*, 6, art. no. 8539994, pp. 73041-73051. Cited 30 times.
<http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=6287639>
doi: 10.1109/ACCESS.2018.2882138
- [View at Publisher](#)
-
- 14 Burgermaster, M., Son, J.H., Davidson, P.G., Smaldone, A.M., Kuperman, G., Feller, D.J., Burt, K.G., (...), Mamykina, L.
A new approach to integrating patient-generated data with expert knowledge for personalized goal setting: A pilot study ([Open Access](#))
- (2020) *International Journal of Medical Informatics*, 139, art. no. 104158. Cited 7 times.
www.elsevier.com/inca/publications/store/5/0/6/0/4/0/
doi: 10.1016/j.ijmedinf.2020.104158
- [View at Publisher](#)
-
- 15 Chen, C.-H., Karvela, M., Sohbati, M., Shinawatra, T., Toumazou, C.
PERSON - Personalized Expert Recommendation System for Optimized Nutrition
- (2018) *IEEE Transactions on Biomedical Circuits and Systems*, 12 (1), art. no. 8089390, pp. 151-160. Cited 29 times.
http://www.ieee.org/products/onlinepubs/news/0806_01.html
doi: 10.1109/TBCAS.2017.2760504
- [View at Publisher](#)
-
- 16 Marinchev, I., Agre, G.
An expert system for healthful and dietary nutrition
- (2016) *ACM International Conference Proceeding Series*, 1164, pp. 229-236.
<http://portal.acm.org/>
ISBN: 978-145034182-0
doi: 10.1145/2983468.2983485
- [View at Publisher](#)
-

- 17 Noah, S.A., Abdullah, S.N., Shahar, S., Abdul-Hamid, H., Khairudin, N., Yusoff, M., Ghazali, R., (...), Abdul-Manaf, Z.
DietPal: A Web-based dietary menu-generating and management system ([Open Access](#))

(2004) *Journal of Medical Internet Research*, 6 (1), pp. 32-48. Cited 30 times.
<http://www.jmir.org/2004/1/e4/>
doi: 10.2196/jmir.6.1.e4

View at Publisher
-
- 18 Jaswal, G., Kaul, A., Nath, R.
Knuckle print biometrics and fusion schemes - Overview, challenges, and solutions

(2016) *ACM Computing Surveys*, 49 (2), art. no. 34. Cited 55 times.
<http://dl.acm.org/citation.cfm?id=J204>
doi: 10.1145/2938727

View at Publisher
-
- 19 Jung, H., Chung, K.
Knowledge-based dietary nutrition recommendation for obese management

(2016) *Information Technology and Management*, 17 (1), pp. 29-42. Cited 84 times.
<http://www.kluweronline.com/issn/1385-951X>
doi: 10.1007/s10799-015-0218-4

View at Publisher
-
- 20 Bush, C.L., Blumberg, J.B., El-Sohehy, A., Minich, D.M., Ordovás, J.M., Reed, D.G., Behm, V.A.Y.
Toward the Definition of Personalized Nutrition: A Proposal by The American Nutrition Association ([Open Access](#))

(2020) *Journal of the American College of Nutrition*, 39 (1), pp. 5-15. Cited 61 times.
<http://www.tandfonline.com/toc/uacn20/current>
doi: 10.1080/07315724.2019.1685332

View at Publisher
-
- 21 Limon-Miro, A.T., Lopez-Teros, V., Astiazaran-Garcia, H.
Dynamic macronutrient meal-equivalent menu method: Towards individual nutrition intervention programs ([Open Access](#))

(2019) *Methods and Protocols*, 2 (3), art. no. 78, pp. 1-11. Cited 3 times.
<https://www.mdpi.com/2409-9279/2/3/78>
doi: 10.3390/mps2030078

View at Publisher
-
- 22 Kale, A., Auti, N.
Automated menu planning algorithm for children: food recommendation by dietary management system using ID3 for Indian food database ([Open Access](#))

(2015) *Procedia Computer Science*, 50, pp. 197-202. Cited 15 times.
<http://www.sciencedirect.com/science/journal/18770509>
doi: 10.1016/j.procs.2015.04.070

View at Publisher
-

-
- 23 Yang, L., Hsieh, C.-K., Yang, H., Pollak, J.P., Dell, N., Belongie, S., Cole, C., (...), Estrin, D.
Yum-Me: A personalized nutrient-based meal recommender system ([Open Access](#))

(2017) *ACM Transactions on Information Systems*, 36 (1), art. no. 7. Cited 82 times.
<http://www.acm.org/tois>
doi: 10.1145/3072614

View at Publisher
-
- 24 Yera Toledo, R., Alzahrani, A.A., Martinez, L.
A food recommender system considering nutritional information and user preferences ([Open Access](#))

(2019) *IEEE Access*, 7, art. no. 8765311, pp. 96695-96711. Cited 37 times.
<http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=6287639>
doi: 10.1109/ACCESS.2019.2929413

View at Publisher
-
- 25 Ahmed, I. M., Alfonse, M., Salem, M. A. A. M.
(2015) *Daily Meal Planner Expert System for Diabetics Type-2*
E-Leader Prague 2007
-
- 26 Gupta, M. V, Bhattacharjee, P., Kotian, N.
DANES: Diet and Nutrition Expert System for Meal Management and Nutrition Counseling
(2017) *Int. J. Recent Innov. Trends Comput. Commun*, 5 (12), pp. 204-208.
-
- 27 Al-Dhuhli, B.A., Al-Gadidi, B.S., Al-Alawi, H.H., Al-Busaidi, K.A.
Developing a nutrition and diet expert system prototype

(2013) *Vision 2020: Innovation, Development Sustainability, and Economic Growth - Proceedings of the 21st International Business Information Management Association Conference, IBIMA 2013*, 2, pp. 1368-1375. Cited 6 times.
ISBN: 978-098214890-7
-
- 28 Mohammad, A. H., Al Saiyd, N. A. M.
A Framework For Knowledge Acquisition
(2010) *Int. J. Comput. Sci. Netw. Secur*, 10 (May), pp. 42-50.
-
- 29 Espín, V., Hurtado, M.V., Noguera, M.
Nutrition for Elder Care: A nutritional semantic recommender system for the elderly

(2016) *Expert Systems*, 33 (2), pp. 201-210. Cited 48 times.
doi: 10.1111/exsy.12143

View at Publisher
-

-
- 30 Ribeiro, D., Machado, J., Ribeiro, J., Vasconcelos, M.J.M., Vieira, E.F., De Barros, A.C.
SousChef: Mobile meal recommender system for older adults
([Open Access](#))
- (2017) *ICT4AWE 2017 - Proceedings of the 3rd International Conference on Information and Communication Technologies for Ageing Well and e-Health*, pp. 36-45. Cited 22 times.
<http://www.scitepress.org/DigitalLibrary/HomePage.aspx>
ISBN: 978-989758251-6
doi: 10.5220/0006281900360045
- [View at Publisher](#)
-
- 31 Mata, F., Torres-Ruiz, M., Zagal, R., Guzman, G., Moreno-Ibarra, M., Quintero, R.
A cross-domain framework for designing healthcare mobile applications mining social networks to generate recommendations of training and nutrition planning
- (2018) *Telematics and Informatics*, 35 (4), pp. 837-853. Cited 21 times.
doi: 10.1016/j.tele.2017.04.005
- [View at Publisher](#)
-
- 32 Pilnick, A., Swift, J.A.
Qualitative research in nutrition and dietetics: Assessing quality ([Open Access](#))
- (2011) *Journal of Human Nutrition and Dietetics*, 24 (3), pp. 209-214. Cited 49 times.
doi: 10.1111/j.1365-277X.2010.01120.x
- [View at Publisher](#)
-
- 33 Anderson, C.
Presenting and evaluating qualitative research ([Open Access](#))
- (2010) *American Journal of Pharmaceutical Education*, 74 (8). Cited 454 times.
<http://www.ajpe.org/aj7408/aj7408141/aj7408141.pdf>
doi: 10.5688/aj7408141
- [View at Publisher](#)
-
- 34 Draper, A., Swift, J.A.
Qualitative research in nutrition and dietetics: Data collection issues
- (2011) *Journal of Human Nutrition and Dietetics*, 24 (1), pp. 3-12. Cited 102 times.
doi: 10.1111/j.1365-277X.2010.01117.x
- [View at Publisher](#)
-
- 35 Braun, V., Clarke, V.
Using thematic analysis in psychology
- (2006) *Qualitative Research in Psychology*, 3 (2), pp. 77-101. Cited 69964 times.
doi: 10.1191/1478088706qp063oa
- [View at Publisher](#)
-

- 36 Kerksick, C.M., Wilborn, C.D., Roberts, M.D., Smith-Ryan, A., Kleiner, S.M., Jäger, R., Collins, R., (...), Kreider, R.B.
ISSN exercise & sports nutrition review update: Research & recommendations ([Open Access](#))

(2018) *Journal of the International Society of Sports Nutrition*, 15 (1), art. no. 38. Cited 298 times.
<http://www.jissn.com/>
doi: 10.1186/s12970-018-0242-y

View at Publisher
-
- 37 Shahar, S., Safii, N. S., Manaf, Z., Haron, H.
(2015) *Atlas Makanan: Saiz Pertukaran & Porsi, 3rd editio*. Cited 2 times.
Kuala Lumpur: MDC Publishers Sdn Bhd
-
- 38 Nutrition and athletic performance

(2009) *Medicine and Science in Sports and Exercise*, 41 (3), pp. 709-731. Cited 727 times.
<http://www.lww.com/product/?0195-9131>
doi: 10.1249/MSS.0b013e31890eb86

View at Publisher
-
- 39 Nik Shanita, S., Rahman, A.H.A., Azimah, A., Mohamad Izham, M., Othman, N.E., Chan, Y.T., Pushpa, B.S., (...), Ruzita, A.T.
DietScore™: Sports nutrition-based mobile application for athletes and active individuals

(2017) *IFMBE Proceedings*, 58, pp. 1-5. Cited 2 times.
<http://www.springer.com/series/7403>
ISBN: 978-981103736-8
doi: 10.1007/978-981-10-3737-5_1

View at Publisher
-
- 40 Quesada-López, C.
(2009) *Design, Development and Validation of a Mobile Application for Goal Setting and Self-Monitoring of Dietary Behaviors*
2004
-
- 41 Altameem, E. A.
(2015) *Impact of Agile Methodology on Software Development*, 8 (2), pp. 9-14. Cited 55 times.
-

© Copyright 2021 Elsevier B.V., All rights reserved.

About Scopus

[What is Scopus](#)

[Content coverage](#)

[Scopus blog](#)

[Scopus API](#)

[Privacy matters](#)

Language

[日本語版を表示する](#)

[查看简体中文版本](#)

[查看繁體中文版本](#)

[Просмотр версии на русском языке](#)

Customer Service

[Help](#)

[Tutorials](#)

[Contact us](#)

ELSEVIER

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

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

We use cookies to help provide and enhance our service and tailor content. By continuing, you agree to the use of cookies ↗.

