

Institutional Sign In

Browse

My Settings

Get Help

Subscribe

Advertisement

Browse Conferences > Cybernetics (CYBCONF), 2015 I...

< Previous | Back to Results | Next >

Linguistic variable elimination for a heart failure dataset

Sign In or Purchase
to View Full Text

1
Paper
Citation

42
Full
Text Views

Related Articles

Improving smart card security using self-timed circuits

Recovering 3D metric structure and motion from multiple uncalibrated cameras

[View All](#)

3

Author(s)

Jan Bohacik ; Karol Matiaszko ; Miroslav Benedikovic

[View All Authors](#)

Abstract

Authors

Figures

References

Citations

Keywords

Metrics

Media

Abstract:

Patients with heart failure often suffer disabling symptoms. In addition to these symptoms, half of all patients diagnosed with heart failure die within four years. The prevalence of heart failure is currently about 2%-3% of the adult population and it is expected to grow. It is interesting to predict if a patient with heart failure dies soon so that life-threatening situations and costs are minimized. In this paper, a data mining method for discovering fuzzy rules with different truth level thresholds in linguistic variable elimination for prediction of death on the basis of data available in hospitals is presented. Cognitive uncertainties are taken into consideration through the use of fuzzy sets, membership functions and membership degrees. The accuracy of the prediction of the death for a patient with heart failure and the interpretability of fuzzy rules are discussed. Our study shows, in comparison to other data mining methods, that it is useful for this type of prediction.

Published in: Cybernetics (CYBCONF), 2015 IEEE 2nd International Conference on

Date of Conference: 24-26 June 2015

INSPEC Accession Number: 15347453

Date Added to IEEE Xplore: 06 August 2015

DOI: 10.1109/CYBConf.2015.7175931

ISBN Information:

Electronic ISBN: 978-1-4799-8322-3

Publisher: IEEE

CD-ROM ISBN: 978-1-4799-8320-9

Conference Location: Gdynia, Poland

Advertisement

[Read the full document](#)

Authors



References



Citations



Keywords



Related Articles



Institutional Sign In

Browse

My Settings

Get Help

Subscribe

Advertisement

Browse Conferences > Cybernetics (CYBCONF), 2015 I...

< Previous | Back to Results | Next >

Linguistic variable elimination for a heart failure dataset

Sign In or Purchase
to View Full Text

1
Paper
Citation

42
Full
Text Views

Related Articles

Improving smart card security using self-timed circuits

Recovering 3D metric structure and motion from multiple uncalibrated cameras

[View All](#)

3
Author(s)

Jan Bohacik ; Karol Matiasko ; Miroslav Benedikovic

[View All Authors](#)

Abstract

Authors

Figures

References

Citations

Keywords

Metrics

Media

Jan Bohacik
Department of Informatics, University of Zilina, Slovakia

Karol Matiasko
Department of Informatics, University of Zilina, Slovakia

Miroslav Benedikovic
Department of Informatics, University of Zilina, Slovakia

< > [View All](#)

Advertisement

[Read the full document](#)

Authors



Jan Bohacik
Department of Informatics, University of Zilina, Slovakia

Karol Matiasko
Department of Informatics, University of Zilina, Slovakia

Miroslav Benedikovic
Department of Informatics, University of Zilina, Slovakia

References



Citations



Keywords



Related Articles



Institutional Sign In

Browse

My Settings

Get Help

Subscribe

Advertisement

Browse Conferences > Cybernetics (CYBCONF), 2015 I...

< Previous | Back to Results | Next >

Linguistic variable elimination for a heart failure dataset

Sign In or Purchase
to View Full Text

1
Paper
Citation

42
Full
Text Views

Related Articles

Improving smart card security using self-timed circuits

Recovering 3D metric structure and motion from multiple uncalibrated cameras

View All

3

Author(s)

Jan Bohacik ; Karol Matiasko ; Miroslav Benedikovic

View All Authors

Abstract

Authors

Figures

References

Citations

Keywords

Metrics

Media

References

Citation Map

1. J. Bohacik, "Discovering fuzzy rules in databases with linguistic variable elimination", *Neural Network World*, vol. 20, no. 1, pp. 45-61, 2010.

2. A. Candelieri, D. Conforti, F. Perticone, A. Sciacqua, K. Kawecka-Jaszcz, K. Styczkiewicz, "Early detection of decompensation conditions in heart failure patients by knowledge discovery: The HEARTFAID approaches", *Computers in Cardiology*, pp. 893-896, 2008.

View Article Full Text: PDF (290KB)

3. A. Candelieri, D. Conforti, A. Sciacqua, F. Perticone, "Knowledge discovery approaches for early detection of decompensation conditions in heart failure patients", *International Conference on Intelligent Systems Design and Applications*, pp. 357-362, 2009.

View Article Full Text: PDF (365KB)

< > View All

Advertisement

Download PDF

Read the full document

Download Citation

View References

Email

Print

Request Permissions

Export to Collabratec

Alerts

Authors

References

1. J. Bohacik, "Discovering fuzzy rules in databases with linguistic variable elimination", *Neural Network World*, vol. 20, no. 1, pp. 45-61, 2010.

2. A. Candelieri, D. Conforti, F. Perticone, A. Sciacqua, K. Kawecka-Jaszcz, K. Styczkiewicz, "Early detection of decompensation conditions in heart failure patients by knowledge discovery: The HEARTFAID approaches", *Computers in Cardiology*, pp. 893-896, 2008.
View Article Full Text: PDF (290KB)

3. A. Candelieri, D. Conforti, A. Sciacqua, F. Perticone, "Knowledge discovery approaches for early detection of decompensation conditions in heart failure patients", *International Conference on Intelligent Systems Design and Applications*, pp. 357-362, 2009.

Authors

References

Citations

Keywords

Related Articles

Back to Top

[View Article](#) [Full Text: PDF \(365KB\)](#)

-
4. "Clinical Effectiveness and Evaluation Unit of the Royal College of Physician: Managing chronic heart failure: Learning from best practice. Sudbury" in , Suffolk, UK:The Lavenham Press Ltd, 2005.
-
5. R. Das, I. Turkoglu, A. Sengur, "Effective diagnosis of heart disease through neural networks ensembles", *Expert Systems with Applications*, vol. 36, no. 4, pp. 7675-7680, 2009.
[CrossRef](#) [Google Scholar](#)
-
6. R. Das, I. Turkoglu, A. Sengur, "Diagnosis of valvular heart disease through neural networks ensembles", *Computer Methods and Programs in Biomedicine*, vol. 93, no. 2, pp. 185-191, 2009.
[CrossRef](#) [Google Scholar](#)
-
7. H. Finney, D. J. Newman, C. P. Price, "Adult reference ranges for serum cystatin C creatinine and predicted creatinine clearance", vol. 37, no. 1, pp. 49-59, 2000.
[CrossRef](#) [Google Scholar](#)
-
8. H. Ishibuchi, Y. Kaisho, Y. Nojima, "Complexity interpretability and explanation capability of fuzzy rule-based classifiers", *IEEE International Conference on Fuzzy Systems*, pp. 1730-1735, 2009.
[View Article](#) [Full Text: PDF \(474KB\)](#)
-
9. E. S. Ketchum, A. F. Jacobson, J. H. Caldwell, R. Senior, M. D. Cerqueira, G. S. Thomas, D. Agostini, J. Narula, W. c. Levy, "Selective improvement in Seattle Heart Failure Model risk stratification using iodine-123 meta-iodobenzylguanidine imaging", *Journal of Nuclear Cardiology*, vol. 19, no. 5, pp. 1007-1016, 2012.
[CrossRef](#) [Google Scholar](#)
-
10. G. J. Klir, "Where do we stand on measures of uncertainty ambiguity fuzziness and the like?", *Fuzzy Sets and Systems*, vol. 24, no. 2, pp. 141-160, 1987.
[CrossRef](#) [Google Scholar](#)
-
11. M. Kvet, "Temporal data approach performance", *International Conference on Circuits Systems Communications and Computers*, pp. 75-83, 2015.
-
12. D. S. Lee, P. C. Austin, J. L. Rouleau, P. P. Liu, D. Naimark, J. V. Tu, "Predicting mortality among patients hospitalized for heart failure: Derivation and validation of a clinical model", *JAMA*, vol. 290, no. 19, pp. 2581-2587, 2003.
[CrossRef](#) [Google Scholar](#)
-
13. D. S. Lee, A. Stitt, P. C. Austin, T. A. Stukel, M. J. Schull, A. Chong, G. E. Newton, J. S. Lee, J. V. Tu, "Prediction of heart failure mortality in emergent care: A cohort study", *Annals of Internal Medicine*, vol. 156, no. 11, pp. 767-775, 2012.
[CrossRef](#) [Google Scholar](#)
-
14. J. Lopez-Sendon, "The heart failure epidemic", *Medicographia*, vol. 33, no. 4, pp. 363-369, 2011.
-
15. L. Pecchia, P. Melillo, M. Bracale, "Remote health monitoring of heart failure with data mining via CART method on HRV features", *IEEE Transactions on Biomedical Engineering*, vol. 58, no. 3, pp. 800-804, 2011.
[View Article](#) [Full Text: PDF \(199KB\)](#)
-
16. K. T. Phillips, W. N. Street, "Predicting outcomes of hospitalization for heart failure using logistic regression and knowledge discovery methods", *AMIA Annual Symposium*, pp. 1080, 2005.
-
17. J. R. Quinlan, "Decision trees as probabilistic classifier", *International Workshop on Machine Learning*, pp. 31-37, 1987.
[CrossRef](#) [Google Scholar](#)
-
18. I. H. Witten, E. Frank, M. A. Hall, "Practical Machine Learning Tools and Techniques" in , Burlington, MA, USA:Morgan Kaufman Publishers, 2011.



Keywords



Related Articles



IEEE Account

- » Change Username/Password
- » Update Address

Purchase Details

- » Payment Options
- » Order History
- » View Purchased Documents

Profile Information

- » Communications Preferences
- » Profession and Education
- » Technical Interests

Need Help?

- » **US & Canada:** +1 800 678 4333
- » **Worldwide:** +1 732 981 0060
- » Contact & Support

| [About IEEE Xplore](#) | [Contact Us](#) | [Help](#) | [Accessibility](#) | [Terms of Use](#) | [Nondiscrimination Policy](#) | [Sitemap](#) | [Privacy & Opting Out of Cookies](#)

A not-for-profit organization, IEEE is the world's largest technical professional organization dedicated to advancing technology for the benefit of humanity.
© Copyright 2018 IEEE - All rights reserved. Use of this web site signifies your agreement to the terms and conditions.