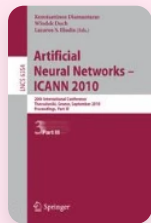


[Home](#) > [Artificial Neural Networks – ICANN 2010](#) > Conference paper

Identification of the Head-and-Shoulders Technical Analysis Pattern with Neural Networks

| Conference paper

| pp 130–136 | [Cite this conference paper](#)





Artificial Neural Networks – ICANN 2010

(ICANN 2010)

[Achilleas Zaprakis](#) & [Prodromos Tsinaslanidis](#)

 Part of the book series: [Lecture Notes in Computer Science](#) ((LNTCS, volume 6354))



 Included in the following conference series:
[International Conference on Artificial Neural Networks](#)

 **3598** Accesses  **10** Citations

Abstract

In this paper we present a novel approach for identifying the head-and-shoulders technical analysis pattern based on neural networks. For training the network we use actual patterns that were identified in stochastically simulated price series by means of a rule-based algorithm. Then the patterns are being converted to binary


images, in a manner similar to the one used in hand-written character and digit recognition. Our approach is tested on new simulated price series using a rolling window of variable size. The results are very promising with an overall correct classification rate of 97.1%.

 This is a preview of subscription content, [log in via an institution](#)  to check access.

Access this chapter

Log in via an institution →

Subscribe and save

-  Springer+ from €37.37 /Month
- Starting from 10 chapters or articles per month
 - Access and download chapters and articles from more than 300k books and 2,500 journals
 - Cancel anytime

View plans →

Buy Now

 **Chapter**

EUR 29.95
Price includes VAT (Poland)

- Available as PDF
- Read on any device
- Instant download
- Own it forever

Buy Chapter →

 **eBook**

EUR 42.79
Price includes VAT (Poland)

- Available as PDF
- Read on any device
- Instant download
- Own it forever

Buy eBook →

 **Softcover Book**

EUR 53.49
Price includes VAT (Poland)

- Compact, lightweight edition
- Dispatched in 3 to 5 business days
- Free shipping worldwide - [see info](#)

Buy Softcover Book →

Tax calculation will be finalised at checkout

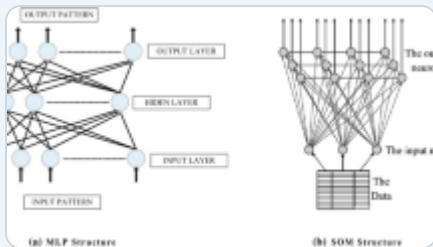
Purchases are for personal use only

[Institutional subscriptions](#) →

Preview

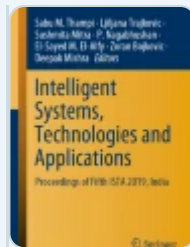
Unable to display preview. [Download preview PDF.](#)

Similar content being viewed by others



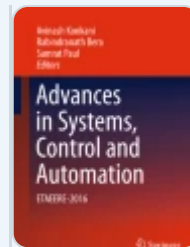
Optimum profit-driven churn decision making: innovative artificial neural networks in telecom industry

Article | 09 April 2020



Handwritten English Character Recognition Using Swarm Intelligence and Neural Network

Chapter | © 2020



Fundamental Concepts of Neural Networks and Deep Learning of Different Techniques to Classify the...

Chapter | © 2018

Explore related subjects

Discover the latest articles, books and news in related subjects, suggested using machine learning.

[Automated Pattern Recognition](#)

[Machine Learning](#)

[Neural Patterning](#)

[Pattern vision](#)

[Shape Analysis](#)

[Time Series Analysis](#)

References

1. Bernd, L.: Are Technical Trading Rules Profitable? Evidence for head-and-shoulder rules. *Applied Economics* 35, 33–40 (2003)
[Article](#) [Google Scholar](#)
2. Edwards, R.D., Magee, J.: *Technical Analysis of Stock Trends*. 7th edn. (1997)
[Google Scholar](#)
3. Achelis, S.B.: *Technical Analysis From A to Z* (1995)
[Google Scholar](#)
4. McCulloch, W.S., Pitts, W.H.: A logical calculus of the ideas immanent in nervous activity. *Bulletin of Mathematical Biophysics* 5, 115–133 (1943)
[Article](#) [MATH](#) [MathSciNet](#) [Google Scholar](#)
5. Li, T.F., Yu, S.S.: Handprinted Chinese character recognition using the probability distribution feature. *Int. J. Pattern Recogn. Artif. Intell.* 8(5), 1241–1258 (1994)
[Article](#) [Google Scholar](#)
6. Tsay, M.-K., Shyo, K.-H., Chang, P.-C.: Feature Transformation with Generalized Learning Vector Quantization for Hand-Written chinese Character Recognition. *IEICE Trans. Inf. & Syst.*, E82-D(3) (1999)
[Google Scholar](#)
7. Camastra, F., Vinciarelli, A.: Cursive character recognition by learning vector

quantization. Pattern Recognition Letters 22, 625–629 (2001)

[Article](#) [MATH](#) [Google Scholar](#)

8. Liu, C.-L., Nakagawa, M.: Evaluation of prototype learning algorithms for nearest-neighbor classifier in application to handwritten character recognition. Pattern Recognition 34, 601–615 (2001)

[Article](#) [MATH](#) [Google Scholar](#)

9. Liu, C.-L., Sako, H., Fujisawa, H.: Performance evaluation of pattern classifiers for handwritten character recognition. International Journal on Document Analysis and Recognition 4, 191–204 (2002)

[Article](#) [Google Scholar](#)

10. Chi, Z., Wu, J., Yan, H.: Handwritten Numeral Recognition Using Self-Organizing Maps and Fuzzy Rules. Pattern Recognition 28(1), 59–66 (1995)

[Article](#) [Google Scholar](#)

11. Looney, C.G.: Pattern Recognition Using Neural Networks (1997)

[Google Scholar](#)

12. Tseng, D.C., Chiu, H.P., Cheng, J.H.: Invariant handwritten Chinese character recognition using fuzzy ring data. Image and Vision Computing 14, 647–657 (1996)

[Article](#) [Google Scholar](#)

13. Kohonen, T.: Self-Organizing Maps. In: Huang, T.S., Kohonen, T., Schroeder, M.R. (eds.) 2nd edn. Springer series in information sciences, vol. 30 (1997)

[Google Scholar](#)

14. Cho, S.-B.: Ensemble of structure-adaptive self-organizing maps for high performance classification. *Information Sciences* 123, 103–114 (1999)

[Article](#) [Google Scholar](#)

15. Hull, J.C.: *Options, Futures, and Other Derivatives*. 6th edn. (2006)

[Google Scholar](#)

16. Fama, E.: 'Efficient Capital Markets: A Review of Theory and Empirical Work'. *Journal of Finance* 25(2), 383–417 (1970)

[Article](#) [Google Scholar](#)

17. Fama, E.: 'Efficient Capital Markets II'. *Journal of Finance* 46(5), 1575–1617 (1991)

[Article](#) [Google Scholar](#)

Author information

Authors and Affiliations

Department of Accounting and Finance, University of Macedonia of Economic and Social Sciences, P.O. Box 1591, 54006, Thessaloniki, Greece
Achilleas Zapanis & Prodromos Tsinaslanidis

Editor information

Editors and Affiliations

Department of Informatics, TEI of Thessaloniki, 57400, Sindos, Greece
Konstantinos Diamantaras

Department of Informatics, Nicolaus Copernicus University, School of Physics, Astronomy, and Informatics, ul. Grudziadzka 5, 87-100, Torun,

Poland

Wlodek Duch

Department of Forestry and Management of the Environment and Natural Resources, Democritus University of Thrace, Pantazidou 193, 68200, Orestiada Thrace, Greece

Lazaros S. Iliadis

Rights and permissions

[Reprints and permissions](#)

Copyright information

© 2010 Springer-Verlag Berlin Heidelberg

About this paper

Cite this paper

Zapranis, A., Tsinaslanidis, P. (2010). Identification of the Head-and-Shoulders Technical Analysis Pattern with Neural Networks. In: Diamantaras, K., Duch, W., Iliadis, L.S. (eds) Artificial Neural Networks – ICANN 2010. ICANN 2010. Lecture Notes in Computer Science, vol 6354. Springer, Berlin, Heidelberg.
https://doi.org/10.1007/978-3-642-15825-4_17

[.RIS↓](#) [.ENW↓](#) [.BIB↓](#)

| | | |
|---------------------------------------------------------------------------------------------------------|------------------------------|-------------------|
| DOI | Publisher Name | Print ISBN |
| https://doi.org/10.1007/978-3-642-15825-4_17 | Springer, Berlin, Heidelberg | 978-3-642-15824-7 |

| | |
|-------------------|---------------------------------------------|
| Online ISBN | eBook Packages |
| 978-3-642-15825-4 | Computer Science |
| | Computer Science (R0) |
| | Springer Nature Proceedings |
| | Computer Science |

Keywords

[Geometric Brownian Motion](#)[Price Series](#)[Rolling Window](#)[Price Path](#)[Handwritten Character](#)

These keywords were added by machine and not by the authors. This process is experimental and the keywords may be updated as the learning algorithm improves.

Publish with us

[Policies and ethics](#) 

Search

Search by keyword or author



Navigation

Find a journal

Publish with us

Track your research