

## Vasilis N. Nikolaidis

Vasilis N. Nikolaidis is currently an associate professor at the Department of Accounting and Finance, of the University of Peloponnese, specializing in the field of Information Technology and Data Management. He holds a BSc degree in Computer Science from Western New England College, an MScE Degree in Computer Science from Johns Hopkins University and a Doctorate Degree from University of Patras. He has numerous publications in scientific journals, has participated in numerous scientific conferences and has redacted and authored two university-level textbooks. His past professional activity includes the design and development of both commercial, off-the-self as well as customized software solutions for data-related problems (data visualization, data analysis and mining, industrial monitoring, signal processing, machine learning and neural network methods for pattern recognition, classification and clustering data, etc.). These tools have been utilized by various public and private institutions internationally for both academic/research and commercial use and have been cited in various papers and results. His current research interests are mainly in the field of data analysis, machine learning and data mining methods, related technology and software, as well as application of these methods to various data problems. He is also involved in the development of related open-license software tools.

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### Education:

Bachelor of Science in Computer Science, Magna cum Laude, Western New England College, USA.  
Master of Engineering in Computer Science, Johns Hopkins University, USA.  
Doctorate Degree, University of Patras, Greece.

### Other Training:

Design of analog and digital filters for signal and image processing Seminars, Dept. of Physics, University of Patras.  
SAP Application Fundamentals (SAP20) and ABAP Workbench (BC400) Seminars, SAP Hellas, Athens Greece.

### Awards:

Scholarship by Stavropoulion Institute.  
Research scholarship, University of Patras.  
Computer Science Award, Western New England College, USA.  
National Deans List, USA.

### Work Experience:

#### (a) Full time:

**2019-to date.** Department of Accounting and Finance, School of Management, University of Peloponnese, Associate Professor in the area of Information Technology and Data Management.

**2019.** Department of Accounting and Finance, School of Management and Economics, Technological Educational Institute of Peloponnese, Associate Professor in the area of Information Technology and Data Management.

**2014-to 2019.** Department of Accounting and Finance, School of Management and Economics, Technological Educational Institute of Peloponnese, Assistant Professor in the area of Information Technology and Data Management.

**2007-2014.** Department of Accounting and Finance, School of Management and Economics, Technological Educational Institute of Peloponnese, Lecturer in the area of Information Technology and Data Management.

**2002-2007.** University of Patras, IT Department, software and network support.

**1999-2002.** Envirocoustics (Mistras Group Hellas), Software design and development.

Indicative work includes:

Designed and developed *Noesis* software (initial version to v.4.5), an integrated data visualization, signal processing, data analysis and pattern recognition tool used in research, non-destructive testing, monitoring, quality control and similar applications, and distributed by Envirocoustics (Mistras Group Hellas), Physical Acoustics Corp. (PAC), Europhysical Acoustics, and other vendors worldwide. Developed *LPMS* (Loose Parts Monitoring LPME-DAQ) software, an AE signal-based monitoring tool for small nuclear energy power generators. Designed and developed *AEWinPost* data post-processing software, distributed by Physical Acoustics Corp. (PAC). Involvement in these and other similar projects was continued on a freelance basis (2003-2008).

**1998.** Dept. of Mechanical and Aeronautics Engineering, University of Patras, performed feasibility study for a real time monitoring system of wind turbine blades. Developed related software (*AEGIS*).

**1996-1997.** Hellenic Military Air Force, mandatory service as an analyst/programmer. Part of service was completed at the Greek National Center for Space Applications (NCSA). Development and maintenance and of related software.

**1993-1996.** Dept. of Mechanical and Aeronautics Engineering, University of Patras, PhD research (CORE team). Performed research in classification, clustering, and pattern recognition of ultrasonic and acoustic emission signals using modified conventional, graph-based, and/or artificial neural network (ANS) methods. Developed related software (*VPR*). Participated in research programs. Participated in the development and enhancement of the Applied Mechanics Laboratory's IT infrastructure.

#### **(b) Part time / Freelance:**

**2003-2008.** Envirocoustics, software design, development and consulting (see above).

**2005.** University of Patras Department of Electrical and Computer Engineering, Lecturer, teaching "Principles of Programming and Programming Languages".

**2003-2007.** Technological Educational Institute of Patras, Lecturer, teaching "Introduction to Programming".

#### **Published Work:**

<http://scholar.google.gr/citations?sortby=pubdate&user=7cEEH2MAAAAJ>

<https://www.scopus.com/authid/detail.uri?authorId=6602419908>

#### **(1) Articles:**

T.P.Philippidis, V.N.Nikolaidis, and A.A.Anastassopoulos (1998), "Damage characterization of carbon/carbon laminates using neural network techniques on AE Signals", *Non Destructive Testing & Evaluation International*, Volume 31, Issue 5, pp. 329-340

A.A.Anastassopoulos, V.N.Nikolaidis and T.P.Philippidis (1999), "A Comparative Study of Pattern Recognition Algorithms for Classification of Ultrasonic Signals", *Neural Computing & Applications*, Vol. 8, No.1. pp. 53-66.

T. P. Philippidis , V. N. Nikolaidis, J. Kolaxis (1999), "Unsupervised Pattern Recognition Techniques for Failure Prediction of Composites", *Journal of Acoustic Emission*, Vol. 17 No.1-2.

N. Tsimogiannis, V. N. Nikolaidis, A. A. Anastassopoulos, P. F. Filho (2002), "Hydrogen Cylinder Acoustic Emission Testing and Data Evaluation with Supervised Pattern Recognition", *NDT.net Special Acoustic Emission Issue*, Vol. 7 No.09.

A. Anastasopoulos, D. A. Kouroussis, V. N. Nikolaidis, A. Proust, A. G. Dutton, M. Blanch, L. E. Jones, P. Vionis, D. J. Lekou, D. R. V. van Delft, P. A. Joosse, T. P. Philippidis, T. Kossivas, G. Fernando (2002), "Structural Integrity Evaluation Of Wind Turbine Blades Using Pattern Recognition Analysis On Acoustic Emission Data", *Journal of Acoustic Emission*, Vol. 20, pp 229-237.

A.Ifantis, V.Nikolaidis, G.Economou (2006), "An application of Pattern Recognition principles for the Investigation of Patterns in Geoelectrical Signals related to Earthquakes in Western Greece, *WSEAS Transactions on Signal Processing*, Issue 3, Vol. 2, ISSN 1790-5022, pp 364-371.

- A.Ifantis, V.Nikolaidis, G.Economou (2006), "An Application of Pattern Recognition techniques for the Analysis of Geoelectrical Signals in relation to the earthquake activity of Western Greece", *WSEAS Transactions on Signal Processing*, Issue 4, Vol. 2, ISSN 1790-5022, p 429.
- S.Spanou, A.Tiniakou, V.Nikolaidis, Th.Georgiadis (2007), "Comparative study of protected areas in Greece: The case-study of three littoral Pinus pinea (stone pine) forests", *Fresenius Environmental Bulletin*, Volume 16 – No. 11a – 2007, pp 1335-1344.
- S. Stavroyiannis, I. Makris, and V. Nikolaidis (2009), "On the closed form solutions for non-extensive Value at Risk", *Physica A*, Vol. 388 issue 17, doi:10.1016/j.physa.2009.05.002, pp 3536-3542.
- S.Stavroyiannis, I.Makris, V.Nikolaidis (2010), "Non-extensive properties, multifractality, and inefficiency degree of the Athens Stock Exchange General Index", *International Review of Financial Analysis* 19, doi: 10.1016/j.irfa.2009.11.005, pp 19–24.
- Nikolaidis V., Makris I.A. and Stavroyiannis S. (2010), "Prediction of exporting ability using company characteristic data", *Journal of European Economy*, ISSN 1684-906X, Vol 9, No 6, 2010, pp. 123-136.
- Makris I.A., Nikolaidis V., and Stavroyiannis S. (2010), "A Discussion About Indicators And Predictors Of Firm Performance: The Case Of Food Products And Beverages Industry In Current Economic Crisis", *Global Business and Economics Anthology*, Volume II, December 2010.
- Nikolaidis V., Makris I.A., and Stavroyiannis S. (2010), "Associating firm performance with past financial data using supervised classifiers", *Global Business and Economics Anthology*, Volume II, Issue 1, December 2010, pp 230-241.
- S. Stavroyiannis, V.Nikolaidis and I.Makris (2011), "On the multifractal properties and the local multifractality sensitivity index of euro to Japanese yen foreign currency exchange rates", *Global Business and Economics Review*, Vol. 13, No. 1, 2011 pp. 93-103.
- IA Makris, VN Nikolaidis, S Stavroyiannis (2012), "Identifying factors affecting firm performance: the role of exporting activity on Greek industry", *International Journal of Business and Globalisation* 9 (1), 2012, pp 59-69.
- S Stavroyiannis, I Makris, V Nikolaidis, L Zarangas (2012), "Econometric modeling and value-at-risk using the Pearson type-IV distribution", *International Review of Financial Analysis* 22, pp 10-17.
- VN Nikolaidis, IA Makris, S Stavroyiannis (2013), "ANS-based preprocessing of company performance indicators", *Global Business and Economics Review* 15 (1), pp. 49-58.
- S Stavroyiannis, I Makris, V Nikolaidis, L Zarangas (2013), "Value-at-risk for the long and short trading position with the Pearson type-IV distribution", *Global Business and Economics Review* 15 (1), pp. 14-27.
- IA Makris, VN Nikolaidis, S Stavroyiannis (2013), "Identifying stocks' characteristics before market crashes: the case of the Athens stock exchange", *Global Business and Economics Review* 15 (1), pp. 76-87.
- Makris I.A. and Nikolaidis V. (2015), "Discussing the consistency of the Euro area: ten years after, is there a real integration?", *Global Business and Economics Review* 17 (3), pp.280-297.
- Ilias A Makris, Vasilis Nikolaidis, Stavros Stavroyiannis (2016) "Economic Growth and Exporting Activity: An Empirical Analysis on Greek Industry", *International Journal of Economics & Business Administration*, Vol 4. Issue 2, pp. 41-52.
- Nikolaidis, V. N., (2021) The nnlib2 library and nnlib2Rcpp R package for implementing neural networks. *Journal of Open Source Software*, 6(61), 2876, <https://doi.org/10.21105/joss.02876>.

Klimentia Kottaridi, Milionis Anna, Demopoulos Vasilis, Rigakou Aimilia, Nikolaidis Vasileios, (2023) A regression analysis method for the prediction of olive oil sensory attributes, Journal of Agriculture and Food Research, Volume 12, 100555, ISSN 2666-1543, <https://doi.org/10.1016/j.jafr.2023.100555>.

Kottaridi, K., Milionis, A., Demopoulos, V., Nikolaidis, V., Tsalgatidou, P.C., Tsafouros, A., Kotsiras, A., & Vithoulkas, A. (2023). Comparative Analysis of Machine Learning Classification Algorithms for predicting Olive Anthracnose Disease. Preprints. <https://doi.org/10.20944/preprints202308.0073.v1> (*this copy is not peer reviewed*).

Nikolaidis, Vassilios and Ilias A Makris (2023) "Using Decision Trees to Examine the Impact of Various Indicators in Company Performance at the Aftermath of an Economic Crisis", Global Business & Economics Anthology, ISSN:1553–1392, Volumes I & II, December 2023, pp 33-47.

Klimentia Kottaridi, Anna Milionis, Vasilis Demopoulos, Vasileios Nikolaidis, Polina C. Tsalgatidou, Athanasios Tsafouros, Anastasios Kotsiras, Alexandros Vithoulkas (2024) "Comparative analysis of machine learning classification algorithms for predicting olive anthracnose disease", Journal of Autonomous Intelligence, Volume 7 Issue 5, doi: 10.32629/jai.v7i5.1466.

Kioulpeoglou, P., David, K. M., Nikolaidis, V., & Makris, I. (2024). Fatigue Reporting in Hellenic Skies: Attitudes, Barriers and Insights from Military, Commercial and General Aviation Pilots. International Journal of Aviation, Aeronautics, and Aerospace, 11(3). DOI: <https://doi.org/10.58940/2374-6793.1934>.

Milionis Anna, Kottaridi Klimentia, Nikolaidis Vasileios, Dimopoulos F. Ioannis, Demopoulos Vasilis (2024) "Sensory Profiling and Classification of Greek Olive Oil Varieties Using Principal Component Analysis and Learning Vector Quantization", Journal of Sensory Studies, Volume 39, Issue 6, e70001 (39:e70001), <https://doi.org/10.1111/joss.70001>.

## **(2) Conferences**

V.Nikolaidis, A. Anastassopoulos, A. Tsimogiannis, D. Kouroussis (2001), "Artificial Intelligence and Neural Networks for the Analysis of Acoustic Emission Signals from Metallic Structures", Proceedings of the 3rd National Conference of the Hellenic Society of Non-Destructive Testing (HSNT), entitled: "NDT: Experience, Applications, Innovations", June 9, Thessaloniki, Greece, pp. 107-113. (in Greek)

A. Anastassopoulos, D. Kouroussis, V. Nikolaidis, A. Proust, A. G. Dutton, M. Blanch, P. Vionis, D. Lekou, D. R. V. van Delft, P. Joosse, T. Philippidis, T. Kossivas, G. Fernando (2002), "Structural Integrity Evaluation of Wind Turbine Blades Using Pattern Recognition Analysis on Acoustic Emission Data", Proceedings of EWGAE 2002, Prague, Czech Republic, 11-13 September.

M. J. Blanch, D. A. Kouroussis, A. A. Anastassopoulos, V. N. Nikolaidis, A. Proust, A. G. Dutton, L. E. Jones, P. Vionis, D. J. Lekou, D. R. V. van Delft, P. A. Joosse, T. P. Philippidis, T. Kossivas, G. Fernando (2002), "Damage Classification of Acoustic Emission using AEGIS Pattern Recognition Software From Ten Small Wind Turbine Blade Tests", (Poster), Global Windpower 2002, Paris, France, 2-5 April.

M. J. Blanch, D. A. Kouroussis, A. A. Anastassopoulos, V. N. Nikolaidis, A. Proust, A. G. Dutton, L. E. Jones, P. Vionis, D. J. Lekou, D R V van Delft, P. A. Joosse, T. P. Philippidis, T Kossivas, G Fernando (2002), "Analysis Of Acoustic Emission, Acousto-Ultrasonic And Infra Red Thermography Data from Ten Small Wind Turbine Blade Tests", Global Windpower 2002, Paris, France, 2-5 April.

A.Ifantis, V.Nikolaidis, G.Economou (2006), "A New Approach to Investigate the existence of patterns in Geoelectrical Signals related to Seismicity of Western Greece, using supervised pattern recognition", Proceedings of the 8th WSEAS Int. Conference on Automatic Control, Modeling and Simulation, Prague, Czech Republic, March 12-14, (pp 364-369).

A.Ifantis, V.Nikolaidis, G.Economou (2006), "An Application of Pattern Recognition techniques for the Investigation of Similarities in Geoelectrical Signals related to major earthquakes in Western Greece", Proceedings of the 6th WSEAS Int. Conf. on Multimedia Systems And Signal Processing, Hangzhou, China, April 16-18.

A.Ifantis, V.Nikolaidis, G.Economou (2007), "An Algorithmic Investigation Of Power Spectrum Features Applied To Geoelectric Field Signals And Seismicity Information", Proceedings of the Fourth IASTED International Conference Signal Processing, Pattern Recognition, and Applications (SPPRA 2007), ISBN 978-0-88986-646, Innsbruck, Austria, Year of Publication: 2007, pp 228-232.

Ilias A. Makris, Vasilios N. Nikolaidis, Stavros Stavroyiannis (2008), "Firm Size and Economic Behaviour: The Case of Food Products Sector", Proceedings of the International Conference on Applied Business & Economics (ICABE 2008), Thessaloniki, Greece, p. 63

Vasilios N. Nikolaidis, Ilias A. Makris, Stavros I. Stavroyiannis (2009), "Prediction of exporting ability using company characteristic data", Proceedings of the International Conference on Applied Economics 2009 (ICOAE 2009), Kastoria, Greece, May 27-30, pp 469-476.

Apostolos Ifantis and Vasilios Nikolaidis (2009), "Extraction and selection of geoelectrical data features", Proceedings of the 16th International Conference on Digital Signal Processing (DSP 2009), Santorini, Greece, July 5-7, 978-1-4244-3298-1/09.

I. A. Makris, S. Stavroyiannis, V. Nikolaidis (2009), "Economic Growth and Exporting Activity: An empirical analysis on Selected Industrial Sectors", Proceedings of International Conference on Applied Business & Economics (ICABE 2009), Book of Abstracts, p. 128, Kavala, Greece, October 1-3.

S. Stavroyiannis, V. Nikolaidis, I. Makris (2010) "High Frequency Dynamics and Local Multifractality of Euro to Japanese Yen Foreign Currency Exchange Rates", Business and Economics Society International Conference, Athens, Greece, p.27.

I. Makris, S. Stavroyiannis, V. Nikolaidis (2010), "Financial Performance During Economic Distress: The Case of Food Products and Beverages Industry", Business and Economics Society International Conference, Athens, Greece, p.30.

V.Nikolaidis, I.Makris&S.Stavroyiannis (2010), "Associating Firm Performance with Financial Data Using Supervised Classifiers", Business and Economics Society International Conference, Athens, Greece, p.33.

V.Nikolaidis, I.Makris & S.Stavroyiannis (2011), "ANS-based preprocessing of company performance indicators", to be presented in Business and Economics Society International Conference, Split, Croatia, July 6-9, 2011.

I.Makris, V.Nikolaidis, & S.Stavroyiannis (2011), "Identifying Stocks' Characteristics, before Market Crashes: The Case of Athens Stock Exchange", Business and Economics Society International Conference, Split, Croatia, July 6-9, 2011.

S. Stavroyiannis, I. Makris, V. Nikolaidis, and L. Zarangas (2011), "Value-At-Risk for the long and short trading position with the Pearson Type-IV distribution", Business and Economics Society International Conference, Split, Croatia, July 6-9.

V.Nikolaidis, N.Zacharias, S.Stavroyiannis, A. Oikonomou (2016) "Classification Analysis of Byzantine Glass Tesserae", 41st International Symposium on Archaeometry (ISA), 15 – 21 May 2016, Kalamata, Greece.

Kl. Kottaridi, V.Demopoulos, A.Sidiropoulos, D.Ihara, V.Nikolaidis, D.Antonopoulos (2021) A Risk Assessment Tool for the Contamination of Aflatoxins on Dried Figs based on Machine Learning Algorithms, ICDAAF 2021: 15. International Conference on Data Analytics in Agriculture and Food, December 16-17, 2021, Barcelona, Spain.

Nikolaidis, V., and Makris, I., (2023), "Examination of the effects of economic crises on company performance using tree-based machine-learning methods", 40th Business and Economics Society International, Florence, 6-9 July 2023, abstract p.51

### (3) PhD Thesis:

V.Nikolaidis (1999), “NDT (non destructive testing) techniques of composite materials using unconventional pattern recognition methods”, PhD thesis, Dept. of Mechanical and Aeronautics Engineering, University of Patras (in Greek), DOI: 10.12681/eadd/11158 available at <https://www.didaktorika.gr/eadd/handle/10442/11158>

### (4) Books (redactions):

Earl McKinney, David M. Kroenke, “Processes, Systems, and Information: An Introduction to MIS, 2nd Edition” (in Greek).

### (5) Books (author):

Nikolaidis, V. (2022). Programming in R, The R language, its ecosystem and capabilities. Kallipos, Open Academic Editions. ISBN 978-618-5667-90-0, <http://dx.doi.org/10.57713/kallipos-100> (in Greek).

### (6) Technical Reports:

V.N.Nikolaidis (1994), “Classification of defects in composites using artificial neural systems”. University of Patras, Mechanical Engineering Department, Applied Mechanics Section.

V.N.Nikolaidis and T.P.Philippidis (1996), “Quality Inspection Of Lenses, an image recognition application”, University of Patras, Mechanical Engineering Department, Applied Mechanics Section.

V.N.Nikolaidis, D.A.Kourousis, A.A.Anastassopoulos (2000), “Aegis Software Manual”, Technical Report Ref: TR-015-10/2000.

Mistras Group Hellas (Envirocoustics SA), “Noesis Users Manual” ( – v.4.5).

Mistras Group Hellas (Envirocoustics SA), Noesis Software Documentation and Online Help ( – v.4.5).

V.N.Nikolaidis (2020) “nlib2Rcpp: A Collection of Neural Networks”, R package Reference Manual, <https://cran.r-project.org/web/packages/nlib2Rcpp/nlib2Rcpp.pdf>.

V.N.Nikolaidis (2021) “The nlib2 C++ library and nlib2Rcpp R package for Artificial Neural Networks.”, R package vignette, <https://cran.r-project.org/web/packages/nlib2Rcpp/vignettes/intro.pdf>.

V.N.Nikolaidis (2024) “nlib2Rcpp: A Tool for Creating Custom Neural Networks in C++ and using Them in R”, <https://cran.r-universe.dev/nlib2Rcpp/doc/manual.html>.

### (7) Software design and development (selected):

**Noesis** (initial version up to v.4.5). Creator and designer of software and supporting material, as well as exclusive software developer of Noesis software up to version 4.5. Noesis is an integrated data visualization, signal processing, data analysis, classification and pattern recognition software used mainly (but not exclusively) for analysis of acoustic emission data in non-destructive inspection, testing, monitoring, and quality control applications. Noesis 4.5 software features extensive automatic or user-guided data pre-processing capabilities, signal feature extraction, data filtering, source type/location identification, PCA projections, a variety of machine learning methods (including supervised and unsupervised neural network-based models) for data classification and clustering, capabilities for storing trained schemas with automatic reapplication of all pre-processing steps on new data, continuous statistical analyses of current data classes, wizards to assist analysis, etc. Noesis 4.5 provides a wide variety of visualization methods with various types of interactive 2D/3D graphs, ability to overlay graphs and simultaneously display different variations of the data (e.g. original, scaled, filtered, PCA-projected, training or test subsets, etc.) in multiple graphs of different types, allowing for the simultaneous interaction of the user with different visualizations of the data for highlighting, selecting, deleting, grouping and generally manipulating the data. In addition, Noesis 4.5 software provides real-time data analysis and categorization

capabilities, supports importing and exporting data from various file types and database sources, etc.. Noesis has been used in numerous scientific papers, doctoral theses, etc.

(<https://www.physicalacoustics.com/by-product/noesis/>  
[http://scholar.google.gr/scholar?q="noesis"+acoustic+emission](http://scholar.google.gr/scholar?q=))

**LPMS** (LPME-DAQ), acoustic emission signal-based loose parts monitoring software for small nuclear energy power generators.

(<http://www.physicalacoustics.com/pac-ae-newsletter/loose-parts-monitoring-system-performs-flawlessly/>)

**AWinPost**, acoustic emission signal post-processing software.

([http://www.acoustic-emission.com/software/AWinPost/AWinPost\\_eng.htm](http://www.acoustic-emission.com/software/AWinPost/AWinPost_eng.htm))

**nnlib2Rcpp**, R language expansion package for neural networks.

(<https://CRAN.R-project.org/package=nnlib2Rcpp>)

**(8) Reviewer:**

Journal of Modelling in Management.