SEMEION
CENTRO RICERCHE DI SCIENZE DELLA COMUNICAZIONE
Short Curriculum Vitae Massimo Buscema

Massimo Buscema (1955).
Professor and Computer Scientist, expert in Neural Networks and Artificial Adaptive Systems.

- September 29, 2011.**Decorated with the award** of the Rotary Club of Rome for the Southeast Conference on "Mathematics and Artificial Intelligence together: the new goal for scientific research", Rome.
- September 28, 2011. **Awarded** the prize "150 years of the Unification of Italy Emigration: from the arms to the brain. Contribution of the Italian genius and the heart of scientific progress, economic and social development of the International Community". Part of the "International Forum on Research and Treatment of Pain", Rome, Chamber of Deputies.
- From 2011 – today: Professor Adjoint at the Department of Mathematics and Statistics of the University of Colorado, Denver
- In December 2010: winner of the National Award for Safety and Security (ONPS)
- In June 2010: winner of the International Ostia Award for Science
- From 2010 – today: Member of the Advisory Board . the Center for Computational and Mathematical Biology (CCMB) The CCMB is a center of the University of Denver, Colorado, USA.
- From 2009-today: Consultant of the italian "Presidenza del Consiglio dei Ministri", Rome, Italy.
- From 2003- To 2007: Consultant of New Scotland Yard, London,UK.
- In 2003: Nominated "Grande Ufficiale al merito della Repubblica Italiana" by the President of Italian Republic.
- From 2000- To 2010: Consultant of Bracco Pharmaceutic Group, Milan, Italy.
- From 1985 – today: Founder and Director of Semeion – Research Centre of Science and Communication (a Scientific Organization Recognized by Italian Ministry of Research in 1991 and nominated "Special Institute" in 2005).
- From 1985-1986: Professor of "Computer Science and Linguistics" at the University of Perugia.
- From 1982-1985: Professor and Director of the Department of Science of Communications at the University of Charleston (West Virginia-USA).
- From 1979-1981: Assistant Professor in Science of Communications at American College of Rome - the University of Charleston (West Virginia-USA).
- 1978: Laurea in Letters and Philosophy (University of Rome, "La Sapienza").

Director and Professor at Semeion, Research Center of Sciences of Communication, in Rome (Italy), via Sersale 117, 00128. www.semeion.it m.buscema@semeion.it .
Adjoint Professor at University of Colorado at Denver, Colorado 80217-3364, Campus Box 170, 1250 14th Street, Room 643 P.O. Box 173364. paolo.buscema@ucdenver.edu.
Member on the Editorial Board of various international journals. He has designed, constructed developed new models and algorithms of Artificial Intelligence. Author of scientific publications on theoretical aspects of Natural Computation, with over 250 titles (scientific articles, essays, and books (25) on the same subject) and over 35 Software Systems used in many university and research Centres. Inventor of 26 international patents.
Scientific Director of research projects on the application of artificial intelligence systems in the biomedical field, homeland security and safety (quakes and slides down).

Via Sersale 117 – 00128 ROMA – Tel. 06.50652350 Fax 06.5060064
C.F. 06911530589 – P.I. 01644611004
Ente scientifico con personalità giuridica riconosciuta dal
Ministero Istruzione Università e Ricerca (MIUR) D.M. 12 novembre 1991
Iscrizione al Tribunale di Roma - Ufficio Provvedimenti Speciali

Scientific publications from 2000

1. Vigna L, Brunani A, Brugnera A, Grossi E, Compare A, Tirelli A.S., Conti D M., Agnelli G M., Andersen L L, Buscema M, Riboldi L, Determinants of metabolic syndrome in obese workers: gender differences in perceived job-related stress and in psychological characteristics identified using artificial neural networks. CrossMark, Springer International Publishing AG, part of Springer Nature 2018. https://doi.org/10.1007/s40519-018-0536-8. 10 July 2018.

2. **Buscema M**, Sacco P L, Della Torre F, Massini G, Breda M, Ferilli G, Theory of impossible worlds: Toward a physics of information, Chaos, American Institute of Physics, https://doi.org/10.1063/1.5024371. 29 May 2018.

3. **Buscema M**, Sacco P L, Massini G, Della Torre F, Brogi M, Salonia M, Ferilli G. Unraveling the space grammar of terrorist attacks: A TWC approach. Technological Forecasting & Social Change, Elsevier, https://doi.org/10.1016/j.techfore.2018.02.006. February 2018.

4. **Buscema M**, Ferilli G, Sacco P L. The meta-geography of the open society: An Auto-CM ANN approach, Expert Systems With Applications, 99 (2018) 12–24 Elsevier, https://doi.org/10.1016/j.eswa.2018.01.017. 12 January 2018.

5. **M Buscema**, G Massini, PL Sacco, The Topological Weighted Centroid (TWC): A topological approach to the time-space structure of epidemic and pseudo-epidemic processes, Physica A, Elsevier, doi.org/10.1016/j.physa.2017.09.050, 22 November 2017.

6. **M Buscema**, G Massini, M Fabrizi, M Breda, F Della Torre, The ANNS approach to DEM reconstruction, in Computational Intelligence, Wiley, DOI: 10.1111/coin.12151, November 2017.

7. **M Buscema**, PL Sacco, Digging deeper on "deep" learning: A computational ecology approach, in BEHAVIORAL AND BRAIN SCIENCES (2017), pages 28-29, doi:10.1017/S0140525X1700005X, e256. November 2017.

8. Mapping fractional landscape soils and vegetation components from Hyperion satellite imagery using an unsupervised machine-learning workflow. Michael J. Friedel, **Massimo Buscema**, Luiz Eduardo Vicente, Fabio Iwashita & Andréa Koga-Vicente. International Journal of Digital Earth, Taylor & Fancis Group. Doi: 10.1080/17538947.2017.1349841, 11 July 2017.

9. Does regional belonging explain the similarities in the expenditure determinants of Italian healthcare deliveries? An approach based on Artificial Neural Networks. F. S. Mennini, L. Gitto, S. Russo, A. Cicchetti, M. Ruggeri, S. Coretti, G. Maurelli, **P. M. Buscema.** Economic Analysis and Policy 55 (2017) 47–56, Elsevier, http://dx.doi.org/10.1016/j.eap.2017.04.005. 29 April 2017.

10. Computational Eco-Systems for Handwritten Digits Recognition,A. Loquercioa, F. Della Torre, **M. Buscema**. Elsevier, 07 March 2017.

11. Diagnosis of autism through EEG processed by advanced computational algorithms: A pilot study. E. Grossi, C. Olivieri, **M. Buscema**. Computer Methods and Programs in Biomedicine 142 (2017) 73–79. Elsevier. http://dx.doi.org/10.1016/j.cmpb.2017.02.002. 2017, 02, 6.

12. What kind of 'world order'? An artificial neural networks approach to intensive data mining. **M. Buscema**, G. Ferilli, P. L. Sacco. Technological Forecasting & Social Change. Elsevier. January, 2017.

13. Top corporate brands and the global structure of country brand positioning: An AutoCM ANN approach. Guido Ferilli, Pier Luigi Sacco,Emanuele Teti, **Massimo Buscema**. Expert Systems With Applications 66 (2016) 62–75. Elsevier. 3 September 2016.

14. Pattern Recognition for Flank Eruption Forecasting: An Application at Mount Etna Volcano (Sicily, Italy). A. Brancato, **P. M. Buscema**, G. Massini, S. Gresta. Open Journal of Geology,

SEMEION

2016, 6, 583-597. Published Online July 2016 in SciRes. http://dx.doi.org/10.4236/ojg.2016.67046. Scientific Research Publishing. 26 July 2016.

15. MST Fitness Index and implicit data narratives: A comparative test on alternative unsupervised algorithms, **Massimo Buscema**, Pier Luigi Sacco. Physica A, 461 (2016) 726–746. Elsevier. 8 June 2016.

16. Artificial neural networks and their potentialities in analyzing budget health data: an application for Italy of what-if theory. **Massimo Buscema**, Guido Maurelli, Francesco Saverio Mennini, Lara Gitto, Simone Russo,Matteo Ruggeri, Silvia Coretti, Americo Cicchetti. Quality & Quantity, 10.1007/s11135-016-0329-y, Springer Science+Business Media Dordrecht 2016. 24 March 2016.

17. The perception of corruption in health: AutoCM methods for an international comparison, **Paolo Massimo Buscema**, Lara Gitto, Simone Russo, Andrea Marcellusi, Federico Fiori, Guido Maurelli, Giulia Massini & Francesco Saverio Mennini. Quality & Quantity, International Journal of Methodology, ISSN 0033-5177, DOI 10.1007/s11135-016-0315-4. 20 February 2016.

18. The contribution of Artificial Adaptive System to limit the influence of systematic errors in the definition of the kinematic behavior of an extremely-slow landslide, M.Vincenzo Massimi, Masoud Asadi-Zeydabady, **Massimo Buscema**, Donatella Dominici, Weldon Lodwick, Lucia Simeoni, Engineering Geology, Available online 30 December 2015.

19. The H0 function, a new index for detecting structural/topological complexity information in undirected graphs. **Massimo Buscema**, Masoud Asadi-Zeydabadi, Weldon Lodwickb, Marco Breda. Elsevier, Physica A 447 (2016) 355–378. 23 December 2015.

20. Why Mathematical Computer Simulations Are the New Laboratory for Scientists. **M. Buscema.** Substance Use & Misuse, 50:8-9, 1058-1078. 11 Septembre 2015.

21. Multidimensional Similarities at a Global Scale: An Approach to Mapping Open Society Orientations. **M. Buscema**, P. L. Sacco, G. Ferilli. Springer Science+Business Media Dordrecht 2015. Social Indicators Research An International and Interdisciplinary Journal for Quality-of-Life Measurement. ISSN 0303-8300, Volume 128, Number 3, Soc Indic Res (2016) 128:1239-1258 DOI 10.1007/s11205-015-1077-4. August 2015.

22. Artificial Adaptive Systems to predict the magnitude of earthquakes. **M. Buscema**, G. Massini,G. Maurelli. Bollettino di Geofisica Teorica ed Applicata. Vol. 56, n. 2, pp. 227-256; June 2015.

23. Artificial Neural Network. What-If Theory. **M. Buscema**, W. J. Tastle. International Journal of Information Systems and Social Change, 6(4), 52-81, October-December 2015. July 2015.

24. Data Mining of Determinants of Intrauterine Growth Retardation Revisited Using Novel Algorithms Generating Semantic Maps and Prototypical Discriminating Variable Profiles. **M. Buscema**, E. Grossi, L. Montanini, M. E. Street. Plos one, DOI:10.1371/journal.pone. 0126020, July 2015.

25. An improved I-FAST system for the diagnosis of Alzheimer's diseasefrom unprocessed electroencephalograms by using robust invariantfeatures. **M. Buscema**, F.Vernieri, G. Massini, F. Scrascia,M. Breda, P. M. Rossini, E. Grossi. Artificial Intelligence in Medicine 64 (2015) 59–74. Elsevier. May 2015.

26. Outcome predictors in autism spectrum disorders preschoolers undergoing treatment as usual: insights from an observational study using artificial neural networks. A. Narzisi, F.Muratori, **M. Buscema**, S. Calderoni, E. Grossi. Neuropsychiatric Disease and Treatment 2015:11 1587–1599, Dovepress, 30 June 2015.

27. Understanding Cultural Geography as a Pseudo-Diffusion Process: The Case of the Veneto Region. G. Ferilli , P. L. Sacco, **M. Buscema** and G. Tavano Blessi . Economies 2015, 3, 100-127; doi:10.3390/economies3020100.

SEMEION

28. Application of artificial neural networks to link genetic and environmental factors to DNA methylation in colorectal cancer, F. Coppedè, E. Grossi, A. Lopomo, R. Spisni, **M. Buscema**, L. Migliore, Epigenomics, (2015) 7(2), pp. 175–186.

29. Networks in Coronary Heart Disease Genetics As a Step towards Systems Epidemiology, F. Drenos, E. Grossi, **M. Buscema**, S. E. Humphries, PLOS ONE, DOI:10.1371/journal.pone.0125876, May 7, 2015.

30. Cultural Geography as a Pseudo-Diffusion Process. The Region of Veneto Case. G. Ferilli, P.L. Sacco, **M. Buscema**, G. Tavano Blessi , Economies 2015, 3, 100-127; doi:10.3390/economies3020100.

31. Analyzing the semantics of point spaces through the topological weighted centroid and other mathematical quantities: the hidden geometry of the global economic order, Computational Intelligence, **M. Buscema**, P.L. Sacco, G. Ferilli, M. Breda, E. Grossi, Volume 31, Number 3, 2015.

32. Alzheimer's Disease and Mild Cognitive Impairment Disclosed by a Novel Data Mining Process, M. Gironi, B. Borgiani, E. Farina, E. Mariani, C. Cursano, M. Alberoni, R. Nemni, G. Comi, **M. Buscema**, R. Furlan and E. Grossi, Journal of Alzheimer's Disease 43 (2015) 1199–1213, DOI 10.3233/JAD-141116.

33. A New Risk Chart for Acute Myocardial Infarction by a Innovative Algorithm, F. Licastro, M. Ianni, R. Ferrari, G. Campo, **M. Buscema**, E. Grossi and E. Porcellini, In Proceedings of the International Conference on Health Informatics (HEALTHINF 2015), pages 252-259, gen 2015. DOI: 10.5220/0005183102520259.

34. A Global Immune Deficit in Alzheimer's Disease and Mild Cognitive Impairment Disclosed by a Novel Data Mining Process, M. Gironi, B. Borgiani, E. Farina, E. Mariani, C. Cursano, M. Alberoni, R. Nemni, G. Comi, **M. Buscema**, R. Furlan and E. Grossi, in Alzheimer's Disease and Mild Cognitive Impairment Disclosed by a Novel Data Mining Process, Journal of Alzheimer's Disease 43 (2015) 1199–1213, DOI 10.3233/JAD-141116.

35. K-CM: A new artificial neural network. Application to supervised pattern recognition, **M. Buscema**, V. Consonni, D. Ballabio, A.Mauri, G. Massini , M. Breda , R. Todeschini, Chemometrics and Intelligent Laboratory Systems 138 (2014) 110–119.

36. A New Risk Chart of Acute Myocardial Infarction in Men by an Innovative Algorithm: A Pilot Study, F. Licastro, M. Ianni, G. Campo, R. Ferrari, E. Porcellini, M. Buscema, E. Grossi, Current Pharmacogenomics and Personalized Medicine, pages 159-166, dicember 2014.

37. Innovative diagnostic tools for early detection of Alzheimer's disease, C. Laske, H. R. Sohrabi, S. M. Frost, K. Lopez-de-Ipina, P. Garrard, **M. Buscema**, J. Dauwels, S. R. Soekadar, S. Mueller, C. Linnemann, S. A. Bridenbaugh, Y. Kanagasingam, R. N. Martins, S. E. O'Bryant, Alzheimer's & Dementia, Eselvier Editore, dicember 2014.

38. Analytical Archaeology and Artificial Adaptive Systems, **M. Buscema**, in Archeosema Artificial Adaptive Systems for the Analysis of Complex Phenomena (Collected Papers in Honour of David Leonard Clarke), M. Ramazzotti Ed, ISSN 2385-202X, All'Insegna del Giglio, Novembre 2014.

39. Artificial Neural Networks An overview and their use in the analysis of the AMPHORA-3 Dataset, **P. M. Buscema**, Giulia Massini, and Guido Maurelli, Informa Healthcare, Substance Use & Misuse, Early Online:1–14, 2014. Luglio 2014.

40. Prediction of optimal warfarin maintenance dose using advanced artificial neural networks. E. Grossi, G.M. Podda, M. Pugliano, S. Gabba, A. Verri, G. Carpani, **M. Buscema**, G. Casazza, M. Cattaneo, in Pharmacogenomics (2014) 15(1), 29–37

41. Locating the source of public health events using intelligent adaptive systems: 2011 United States listeriosis outbreak linked to whole cantaloupes, Bronstein, AC; **Buscema, M**; Esfahani, A; Lodwick, WA; Grossi, E; CLINICAL TOXICOLOGY,51,7,625-626, INFORMA HEALTHCARE 2013.

SEMEION

42. Combining Personality Traits with Traditional Risk Factors for Coronary Stenosis: An Artificial Neural Networks Solution in Patients with Computed Tomography Detected Coronary Artery Disease, Compare A., Grossi E., **Buscema M.**, Zarbo C., Xia M., Faletra F., Pasotti E., Moccetti T., Mommersteeg P. M. C., and Auricchio A., Hindawi Publishing Corporation Cardiovascular Psychiatry and Neurology, August 2013.

43. Application of artificial neural networks to investigate one-carbon metabolism in Alzheimer's disease and healthy matched individuals. Coppedè F, Grossi E, **Buscema M.**, Migliore L., PLoS One, Pub Med, NCBI, 12 Agosto 2013.

44. Artificial Neural Networks, and Evolutionary Algorithms as a systems biology approach to a data-base on fetal growth restriction, M.E. Street, **M. Buscema**, A. Smerieri, L. Montanini, E. Grossi, in Prog Biophys Mol Biol., 2013, Jul 1.

45. A New Algorithm for Identifying Possible Epidemic Sources with Application to the German Escherichia coli Outbreak, **M. Buscema**, Enzo Grossi, Alvin Bronstein, Weldon Lodwick, Masoud Asadi-Zeydabadi, Roberto Benzi, Francis Newman in ISPRS International Journal of Geo-Information, 2013, *2*, 155-200.

46. Training with Input Selection and Testing (TWIST) Algorithm: A Significant Advance in Pattern Recognition Performance of Machine Learning, M. **Buscema**, Breda M, Weldon Lodwick W., Journal of Intelligent Learning Systems and Applications, 2013, 5, 29-38.

47. Law Enforcement and Artificial Intelligence, **M. Buscema**, in Intelligent Data Mining in Law Enforcement Analytics, Ch. 01, Tastle W.J, (Eds) Springer, January 2013.

48. The General Philosophy of Artificial Adaptive Systems, **M. Buscema**, in Intelligent Data Mining in Law Enforcement Analytics, Ch. 1 Tastle W.J, (Eds), Springer, January 2013.

49. A Brief Introduction to Evolutionary Algorithms and the Genetic Doping Algorithm, **M. Buscema**, M. Capriotti, in Intelligent Data Mining in Law Enforcement Analytics, Ch. Tastle W.J, (Eds), Springer, January 2013.

50. Artificial Adaptive Systems in Data Visualization: Pro-Active data, **M. Buscema**, in Intelligent Data Mining in Law Enforcement Analytics, Ch.3, Tastle W.J, (Eds), Springer, January, 2013.

51. Supervised Artificial neural Networks: Back Propagation Neural Networks, in Intelligent Data Mining in Law Enforcement Analytics,Ch.7, Tastle W.J, (Eds), Springer, January 2013.

52. Metaclassifiers, **M. Buscema**, S. Terzi, in Intelligent Data Mining in Law Enforcement Analytics, Ch.9, Tastle W.J, (Eds), Springer, January 2013.

53. Auto Identification of a Drug Seller Utilizing a Specialized Supervised Neural Network, **M. Buscema**, M. Intraligi, in Intelligent Data Mining in Law Enforcement Analytics, Ch. 10, Tastle W.J (Eds), Springer, January 2013.

54. Theory of Constraint Satisfaction Neural Networks, M Buscema, Ch.13, in Intelligent Data Mining in Law Enforcement Analytics, Tastle W.J, (Eds), Springer, January 2013.

55. Application of the Constraint Satisfaction Network, M. Intraligi, **M. Buscema**, in Intelligent Data Mining in Law Enforcement Analytics, Ch.13, Tastle W.J, (Eds), Springer, January 2013.

56. Auto-Contractive Maps, h Function and the Maximally regular Graph: A new methodology for data mining, **M. Buscema**, in Intelligent Data Mining in Law Enforcement Analytics, Ch.15, Tastle W.J, (Eds), Springer, January 2013.

57. Auto Contractive Map sand Minimal Spanning tree: Organization of Complex datasets on criminal behavior to aid in the deduction of network connectivity; G. Massini, **M. Buscema**, Ch. 17, in Intelligent Data Mining in Law Enforcement Analytics, Tastle W.J, (Eds), Springer, January 2013.

58. Data Mining Using Non-linear Auto Associative Artificial Neural Networks: The Arrestee Dataset, in Intelligent Data Mining, **M. Buscema**, in Law Enforcement Analytics, Ch.18, Tastle W.J, (Eds), Springer, January 2013.

SEMEION

59. Artificial Adaptive System for Parallel Querying of Multiple Databases, **M. Buscema**, in Intelligent Data Mining in Law Enforcement Analytics, Ch.5, Tastle W.J, (Eds), Springer, January 2013.

60. Assessing Post-Radiotherapy Treatment involving Brain Volume Differences in Children: An Application of Adaptive Systems Methodology, **M Buscema**, F Newman, G Massini, E Grossi, W J. Tastle, and A K. Liu, in Data Mining Applications Using Artificial Adaptive Systems, Ch. 1, pp 1-23, Tastle W.J (Ed), Springer, New York 2013.

61. J-Net: an Adaptive System for Computer-Aided Diagnosis in Lung Nodule Characterization, **M Buscema**, R Passariello, E Grossi, G Massini , F Fraioli, G Serra, C Catalano, in Data Mining Applications Using Artificial Adaptive Systems, Ch.2, pp 25-61, Tastle W.J (Ed), Springer , New York 2013.

62. Population Algorithm: A New Method of Multi Dimensional Scaling, G Massini, S Terzi, **M Buscema**, in Data Mining Applications Using Artificial Adaptive Systems, Ch.3, pp 63-73, Tastle W.J (Ed), Springer , New York 2013.

63. Semantics of Point Spaces through the Topological Weighted Centroid and Other Mathematical Quantities- Theory & Applications, **M. Buscema**, M. Breda, E. Grossi, L. Catzola, PL Sacco, in Data Mining Applications Using Artificial Adaptive Systems, Ch.4, pp 65-139, Tastle W.J (Ed), Springer , New York 2013.

64. Meta Net: A New Meta-Classifier Family, **M. Buscema**, W. J. Tastle, S. Terzi, in Data Mining Applications Using Artificial Adaptive Systems, Chap 5 171-181, Tastle W.J (Ed), Springer, New York 2013.

65. Optimal Informational Sorting: The ACS-ULA Approach, **M. Buscema**, P.L. Sacco, in Data Mining Applications Using Artificial Adaptive Systems, Ch.6 pp 189-209, Tastle W.J (Ed), Springer , New York 2013.

66. GUACAMOLE: A New Paradigm for Unsupervised Competitive Learning, **M. Buscema**, P.L. Sacco, in Data Mining Applications Using Artificial Adaptive Systems, Ch.7, pp 211-229, Tastle W.J (Ed), Springer , New York 2013.

67. Spatiotemporal Mining: A Systematic Approach to Discrete Diffusion Models for Time and Space Extrapolation, **M. Buscema**, P.L. Sacco, E. Grossi, L. A. Lodwick, in Data Mining Applications Using Artificial Adaptive Systems, Chap 8, pp 211-229, Tastle W.J (Ed), Springer, New York 2013.

68. Similarity Coefficients for Binary Chemoinformatics Data: Overview and Extended Comparison Using Simulated and Real Data Sets, R. Todeschini, V. Consonni, H. Xiang, J. Holliday, **M. Buscema,** P. Willet, in Journal of Chemical Information and Modeling, n°52, pp 2884-2901, ACS Publications, USA October 19, 2012.

69. Fathoming Failure, **M. Buscema,** in Substance Use & Misuse, 47:1473-1474, Informa Healtcare, November 2012.

70. The Non-Linear Relationship between Scientific Production and National States' Journals, G. Ferilli, **M. Buscema**, P.L. Sacco, in Advances in Computer Science and Engineering, Vol. 9 N°1, pp.47-65, Pushpa Publishing House, September 2012.

71. A Novel Mathematical Approach to Define the Genes/SNPs Conferring Risk or Protection in Sporadic Amyotrophic Lateral Sclerosis Based on Auto Contractive Map Neural Networks and Graph Theory, **M. Buscema**, S. Penco, E. Grossi, in Neurology Research International, Volume 2012, Hindawi Publishing Corporation, August 2012.

72. The concept of individual semantic maps in clinical psychology: a feasibility study on a new paradigm, E. Grossi, A. Compare, **M. Buscema**, in Quality & Quantity, Springer Publisher, August 04th 2012.

73. The Interaction between Culture, Health and Psychological Wellbeing, E. Grossi, G. Tavano Blessi, P.L. Sacco, **M. Buscema**, Journal of Happiness Studies, Springer Science+ Business Media BV, pp. 1-20, 2011.

6

SEMEION

74. Artificial Neural networks accurately predict mortality in patients with nonvariceal upper GI bleeding G. Rotondano, L. Cipolletta, E. Grossi, M. Koch, M. Intraligi, **M. Buscema**, R. Marmo, Gastrointestinal Endoscopy Volume 73, No. 2 , 2011.

75. Multi factorial interactions in the pathogenesis pathway of Alzheimer's disease: a new risk charts for prevention of dementia, F. Licastro, E. Porcellini, P. Forti, **M. Buscema**, I. Carbone, G. Ravaglia, E. Grossi, in Immunity & Ageing 7(Suppl 1):S4, 2010

76. How to predict a high rate of inappropriateness for upper endoscopy in an endoscopic centre?, L. Buri, G. Bersani, C. Hassan, M. Anti, MA. Bianco, L. Cipolletta, E. Di Giulio ,G. Di Matteo, L. Familiari, L. Ficano, P. Loriga, S. Morini, V. Pietropaolo, A. Zambelli, E. Grossi, M. Intraligi, F. Tessari, **M. Buscema**, the SIED Appropriateness Working Group, in Digestive and Liver Disease 42(9):624-8, September 2010 E-pub 21 March 2010.

77. Artificial Neural Networks Identify the Predictive Values of Risk Factors on the Conversion of Amnestic Mild Cognitive Impairment, M. Tabaton, P. Odetti, S. Cammarata, R. Borghi, F. Monacelli, C. Caltagirone, P. Bossù, **M. Buscema**, E. Grossi, in Journal of Alzheimer's Desease 19, (2010) 1035-1040.

78. The I.F.A.S.T. Model Allows the Prediction of Conversion to Alzheimer Disease in Patients with Mild Cognitive Impairment with High Degree of Accuracy, M Buscema, E. Grossi, M. Capriotti, C. Babiloni, P. Rossini, in Current Alzheimer Research, Vol.7, 2010, pp 173-187.

79. Multivariable Network Associated with Cognitive Decline and Dementia, F. Licastro, E. Porcellini, M. Chiappelli, P. Forti, M Buscema, G. Ravaglia, E. Grossi, inNeurobiology on Aging 31, (2010), Elsevier, pp 257-269.

80. Appropriateness Guidelines and Predictive Rules to Select Patients for Upper Endoscopy: A Nationwide Multicenter Study, L. Buri, C. Hassan, G. Bersani, M. Anti, M. A. Bianco, L. Cipolletta, E. Di Giulio, G. Di Matteo, L. Familiari, L. Ficano, P. Loriga, S. Morini, V. Pietropaolo, A. Zambelli, E. Grossi, M. Intraligi, Statitiscian, **M. Buscema** e the SIED Appropriateness Working Group, in The American Journal of Gastroenterology, Nature Publishing Group, 22 December 2009, pp 1-11.

81. The General Philosophy of Artificial Adaptive Systems, **M. Buscema**, in Artificial Adaptive Systems in Medicine, Ch.1 pp.1-4, Bentham Science Publishers E-Book 2009

82. IFAST: Implicit Function as Squashing Time for EEG Analysis - Application, P.M. Rossini, M Buscema, in Artificial Adaptive Systems in Medicine, Ch.11, pp.104-113, Bentham Science Publishers E-Book 2009

83. IFAST: Implicit Function as Squashing Time for EEG Analysis - Theory, M Buscema, P. M. Rossini, E. Grossi, C. Babiloni, in Artificial Adaptive Systems in Medicine, Ch.10 pp.90-103, Bentham Science Publishers E-Book 2009.

84. The Topological Weighted Centroid and the Semantic of the Physical Space – Application, M Buscema, E. Grossi, T. Jefferson, Ch.9 pp.79-89, in Artificial Adaptive Systems in Medicine Bentham Science Publishers E-Book 2009.

85. The Topological Weighted Centroid, and the Semantic of the Physical Space – Theory, M Buscema, M. Breda, L. Catzola, in Artificial Adaptive Systems in Medicine, Ch.8 pp.69-78, Bentham Science Publishers E-Book 2009.

86. J-Net System: A New Paradigm for Artificial Neural Networks Applied to Diagnostic Imaging – Application, E. Grossi, **M. Buscema**, in Artificial Adaptive Systems in Medicine, Ch.7 pp.60-68, Bentham Science Publishers E-Book 2009.

87. J-Net System: A New Paradigm for Artificial Neural Networks Applied to Diagnostic Imaging – Theory, **M. Buscema**, in Artificial Adaptive Systems in Medicine, Ch.6 pp.48-59, Bentham Science Publishers E-Book 2009.

88. Auto Contractive Maps, H Function and Maximally Regular Graph - Application, C. Helgason, **M. Buscema**, E. Grossi, in Artificial Adaptive Systems in Medicine, Ch. 5pp. 42-47, Bentham Science Publishers E-Book 2009.

SEMEION

89. Auto-Contractive Maps, H Function and Maximally Regular Graph –Theory, M Buscema, in Artificial Adaptive Systems in Medicine, Ch.4 pp. 25-41, Bentham Science Publishers E-Book 2009.

90. A Brief Introduction to Evolutionary Algorithms and the Genetic Doping Algorithm, M Buscema, M. Capriotti, in Artificial Adaptive Systems in Medicine, Ch.3 pp.12-24, Bentham Science Publishers E-Book 2009.

91. A Brief Introduction to Artificial Neural Networks, M Buscema, in Artificial Adaptive Systems in Medicine, Ch.2 pp.5-11, Bentham Science Publishers E-Book 2009.

92. Outbreaks source: A new mathematical approach to identify their possible location, **M. Buscema**, E. Grossi, M. Breda, T. Jefferson, Physica A, 388 (2009), Elsevier, pp 4736-4762.

93. Images as Active Connection Matrixes: the J-Net System, M Buscema, L. Catzola, E. Grossi in ICMED Journal, Vol. 2 n° 1/2008, pp.27 -53.

94. The Semantic Connectivity Map: an adapting self-organising knowledge discovery method in data bases. Experience in gastro-oesophageal reflux disease, **M. Buscema**, E. Grossi in International J. Data Mining and Bioinformatics, Inderscience Publishers, Vol. 2, n. 4, 2008, pp. 362-404.

95. Auto-Contractive Maps: An Artificial Adaptive System for Data Mining. An Application to Alzheimer Disease, **M. Buscema**, E. Grossi, D. Snowdon, P. Antuono, Current Alzheimer Research, Bentham Science Publishers, Vol. 5 n.5-October 2008, pp. 481-498.

96. La complessità strutturale dei distretti industriali: un approccio basato sulle similarità multi-dimensionali, V. Carlei, M. Nuccio, P. Sacco, M Buscema, Scienze Regionali – Italian Journal of Regional Science, Vol. 7, n. 2/2008, pp. 55-86.

97. Artificial Neural Networks for Early Prediction of Mortality in Patients with Non Variceal Upper GI Bleeding (UGIB), E. Grossi, R. Marmo, M. Intraligi, **M. Buscema**, Medical Informatics Insights 2008: I 1-13.

98. Neuropathological findings processed by artificial neural networks (ANNs) can perfectly distinguish Alzheimer's patients from controls in the Nun Study, E. Grossi, **M. Buscema**, D. Snowdon e P. Antuono, BMC Neurology 2007, BioMed Central, pp. 7-15.

99. Is it possible to automatically distinguish resting EEG data of normal elderly vs. mild cognitive impairment subjects with high degree of accuracy?, P. M. Rossini, **M. Buscema**, M. Capriotti, E. Grossi, G. Rodriguez, C. Del Percio, C. Babiloni, Clinical Neurophysiology Vol. 119 n.7- 2008, pp. 1534-1545.

100. New application of intelligent agents in sporadic Amyotrophic Lateral Sclerosis identifies unexpected specific genetic background, S. Penco, **M. Buscema**, M.C. Patrosso, A. Marocchi, E. Grossi, in BMC Bioinformatics 2008, 9:254.

101. Artificial neural networks in the recognition of presence of thyroid disease in patients with atrophic body gastrics,, E. Lahner, **M. Buscema**, M. Intraligi, M. Centanni, L. Vannella, E. Grossi, B. Annibale, in World Journal of Gastroenterology, 2008 January 28; 14(4):563-568.

102. Immaginazione scientifica, rigore e ragionevolezza, **M. Buscema**, G. Maurelli, nel volume "La ragionevolezza nella ricerca scientifica ed il suo ruolo specifico nel sapere giuridico" Tomo I. Nova Juris Interpretatio, Atti del Convegno di Studi, Rome, 2-4 October 2007.

103. The Implicit Function as Squashing Time Model: A Novel Parallel Nonlinear EEG Analysis Technique Distinguishing Mild Cognitive Impairment and Alzheimer's Desease Subjects with High Degree of Accuracy, **M. Buscema**, M. Capriotti, F. Bergami, C. Babiloni, P. Rossini, E. Grossi. Computational Intelligence and Neuroscience. Vol. 2007.

104. Artificial neural networks can classify uninvestigated patients with dispepsia, con A. Andriulli, E. Grossi, **M. Buscema**, A. Pilotto, V. Festa, F. Perri. European Journal of Gastroenterology & Hepatology 2007, pp. 1055-1058.

105. Introduction to artificial neural networks, E. Grossi, **M. Buscema**, European Journal of Gastroenterology & Hepatology 2007, pp. 1046-1054.

106. Images as Active Connection Matrixes: the J-Net System, L. Catzola, E. Grossi. International Journal of Intelligent Computing in Medical Sciences and Image Processing (IC-MED), Vol. I n.3 - 2007, pp. 187-213

107. Neuropathological findings processed by artificial neural networks (ANNs) can perfectly distinguish Alzheimer's patients from controls in the Nun Study, con E. Grossi, D. Snowdon e P. Antuono, BMC Neurology 2007, BioMed Central, pp. 7-15.

108. The added value of "Artificial Organisms" in the analysis of medical data: six years of experience, E. Grossi, A. Mancini, **M. Buscema** , "NAFIPS 2007 Annual Meeting of the North American Fuzzy Information Processing Society", sponsored by Institute of Electrical and Electronics Engineers (IEEE), pp. 502-507.

109. The IFAST model, a novel parallel nonlinear EEG analysis technique, distinguishes mild cognitive impairment and Alzheimer's disease patients with high degree of accuracy, **M. Buscema**, P.M. Rossini, C. Babiloni, E. Grossi, Artificial Intelligence in Medicine 40, pp. 127-141, Elsevier 2007.

110. International experience on the use of artificial neural networks in gastroenterology, con E. Grossi, A. Mancini, **M. Buscema**, in Digestive and Liver Disease 39 pp. 278–285, Elsevier 2007.

111. The Smart Library Architecture of an Orientation Portal, **M. Buscema**, S. Terzi, G. Maurelli, M. Capriotti, V. Carlei, in Quality & Quantity, n. 40, pp. 911-933, Springer 2006.

112. GenD An Evolutionary System for Resampling in Survey Research, C. Meraviglia, G. Massini, D. Croce, **M. Buscema**, in Quality & Quantity, n. 40, pp. 825-859, Springer 2006.

113. Artificial Intelligence and Outcome Research, E. Grossi, **M. Buscema**, in Drug Development Research, n. 67, pp. 227-244, 2006.

114. PST: An Evolutionary Approach to the Problem of Multi Dimensional Scaling, **M. Buscema**, S. Terzi, in WSEAS Transactions on Information Science & Applications, Issue 9, vol. 3, September 2006 pp. 1704-1710.

115. Using Sinusoidal Modulated Weights Improve Feed-Forward Neural Network Performances in Classification and Functional Approximation Problems, **M. Buscema** , S. Terzi, M. Breda, in WSEAS Transactions on Information Science & Applications, Issue 5, vol. 3, May 2006 pp. 885-893.

116. The Travelling Salesman Problem as a new screening test in early Alzheimer's disease: an exploratory study. Visual Problem-solving in AD, L. P. De Vreese, S. Pradelli, G. Massini, **M. Buscema**, R. Savarè, E. Grossi, in Aging Clinical and Experimental Research, vol. 17, n. 6, pp. 458-464; 2005.

117. Progetto Esonet – Applicazione delle Reti Neurali Artificiali nella diagnosi della MRGE, G. Caspani, M. Intraligi, G. Massini, **M. Buscema**, M. Capriotti, V. Carlei, G. Maurelli, A. Mancini, in SAAB Sistemi Artificiali Adattivi in Biomedicina n. 2, vol. II, 2005, pp. 118-157, Di Renzo Editore, Rome.

118. Reti Neurali Artificiali e Screening nella MRGE, P. Dominici, E. Grossi, **M. Buscema**, M. Intraligi, in SAAB Sistemi Artificiali Adattivi in Biomedicina n. 2, vol. II, 2005, pp. 104-117, Di Renzo Editore, Rome.

119. Un protocollo sperimentale di ottimizzazione basato su algoritmi neuro-evolutivi per la classificazione dei pazienti con dispepsia e la previsione dell'efficacia del trattamento, E. Grossi, M. Intraligi, N. Garbagna, A. Andriulli, M. Breda, in SAAB Sistemi Artificiali Adattivi in Biomedicina n. 2, vol. II, 2005, pp. 42-103, Di Renzo Editore, Rome.

120. Identificazione delle variabili correlate al diabete mellito nella pancreatite cronica attraverso l'applicazione delle Reti Neurali Artificiali, E. Gaia, N. Pagano, M. Intraligi, M

SEMEION

Buscema, A. Mancini, P. Salacone, C. Arduino, E. Grossi, in SAAB Sistemi Artificiali Adattivi in Biomedicina n. 2, vol. II, 2005, pp. 10-40, Di Renzo Editore, Rome.

121. Innovazione scientifica, M Buscema, L. Marcellini Hercolani Gaddi, G. Maurelli, contributo inserito nel "Dizionario della sicurezza stradale", a cura di G. Guccione, Fondazione Luigi Guccione Editrice, Cosenza, pp. 95-97, 2005.

122. Possible Contribution of advanced statistical methods (artificial neural networks and linear discriminant analysis) in recognition of patients with suspected atrophic body gastritis, E. Lahner, E. Grossi, M Buscema , M. Intraligi, V. D. Corleto, G. Delle Fave, B. Annibale in World Journal of Gastroenterology, 2005, 11(37), pp. 5867-5873.

123. Artificial neural networks allow the use of simultaneous measurements of Alzheimer Disease markers for early detection of the desease, M. De Luca, E. Grossi, B. Borroni, M. Zimmermann, E. Marcello, F. Colciaghi, F. Gardoni, M. Intraligi, A. Padovani, **M. Buscema** in Journal of Translational Medicine, 2005, pp. 1-7.

124. Two Different Alzheimer Deseases in Men and Women: Clues From Advanced Neural Networks and Artificial Intelligence, E. Grossi, G. Massini, **M. Buscema**, R. Savarè, G. Maurelli, Gender Medicine (2005) Vol. 2 n.5, pp106-117

125. Assessment of the Role of Genetic Polymorphism in Venous Thrombosis Through Artificial Neural Networks, S. Penco, E. Grossi, S. Cheng, M. Intraligi, G. Maurelli, M.C. Patrosso, A. Marocchi e **M. Buscema**, Annals of Human Genetics (2005), 69, pp. 693-706.

126. An Optimized Experimental Protocol Based on Neuro-Evolutionary Algorithms. Application to the Classification of Dyspeptic Patients and to the Prediction of the Effectiveness of Their Treatment, **M. Buscema**, E. Grossi, M. Intraligi, N. Garbagna, A. Andriulli, M. Breda, in Artificial Intelligence in Medicine (AIIM), 2005, 34, pp: 279-305.

127. PST: un approccio evolutivo al problema delle riduzioni delle dimensioni, **M. Buscema**, SAAB Sistemi Artificiali Adattivi in Biomedicina n. 3, vol. I, pp. 154-177, May 2005.

128. Genetic Doping Algorithm (GenD). Teoria e applicazione, **M. Buscema**, SAAB Sistemi Artificiali Adattivi in Biomedicina n. 3, vol. I, pp. 116-153, May 2005.

129. Mapping non lineare di descrittori dell'Alzheimer attraverso un nuovo algoritmo "evolutivo": uno studio pilota, Diagnosi precoce di Alzheimer (AD) attraverso l'elaborazione con Reti Neurali Artificiali, M. Gallucci, A. Mancini, E. Grossi, F. Di Paola, S. Curtolo, **M. Buscema**, M. Ronzon, SAAB Sistemi Artificiali Adattivi in Biomedicina n. 3, vol. I, pp. 104-115, May 2005.

130. Diagnosi precoce di Alzheimer (AD) attraverso l'elaborazione con Reti Neurali Artificiali (RNA) dei marcatori piastrinici della cascata beta-amiloide, E. Grossi, **M. Buscema**, F. Colciaghi, M. Zimmermann, A. Padovani, B. Borroni , G. Di Luca, G. Maurelli, M. Intraligi M. SAAB Sistemi Artificiali Adattivi in Biomedicina n. 3, vol. I, pp. 88-102, May 2005.

131. Le reti neurali e gli organismi artificiali sono in grado di prevedere lo sviluppo della patologia sulla base dello stato cognitivo e funzionale del paziente? M Buscema i, SAAB Sistemi Artificiali Adattivi in Biomedicina, Di Renzo Editore, n. 3, vol. I, pp. 14-87, May 2005.

132. Artificial neural networks are able to recognize gastro-oesophageal reflux disease patients solely on the basis of clinical data, F Pace, M Buscema, P Dominici, M Intraligi, F Baldi, R Cestari, S Passaretti, G Bianchi Porro, E Grossi , European Journal of Gastroenterology & Hepatology, 2005, 17, pp. 605-610.

133. Introduzione alla filosofia dei Sistemi Artificiali Adattivi e loro applicazioni, Buscema M., M. Intraligi , G. Maurelli, in SAAB Sistemi Artificiali Adattivi in Biomedicina, Di Renzo Editore, n. 1, vol. 1, pp. 104-163, January 2005.

134. Dolore addominale e alterazione dell' alvo: è possibile semplificare l'iter diagnostico attraverso l'uso di sistemi di Intelligenza Artificiale, E. Grossi, M. Astegiano, B. Demarchi, F.

SEMEION

Bresso, N. Sapone, A. Mancini, M. Intraligi, P. Dominici, **M. Buscema**, SAAB Sistemi Artificiali Adattivi in Biomedicina, Di Renzo Editore, n. 1, vol. 1, pp. 66-102, January 2005.

135.   Utilizzo delle reti neurali nella MRGE per discriminare i pazienti reflussori dai non reflussori solo sulla base dei dati clinici, F. Pace, **M. Buscema**, P. Dominici, M. Intraligi, F. Baldi, R. Cestari, S. Passaretti, G. Bianchi Porro, E. Grossi, SAAB Sistemi Artificiali Adattivi in Biomedicina, Di Renzo Editore, n. 1, vol. 1, pp. 38-65, January 2005.

136.   Gastrite cronica atrofica: diagnosi con le reti neurali artificiali, **M. Buscema**, E. Grossi, SAAB Sistemi Artificiali Adattivi in Biomedicina, Di Renzo Editore, n. 1, vol. 1, pp. 12-36, January 2005.

137.   CADMRM – A prototype software for automatic Computer Aided Detection and Classification of Lesion in Contrast-Enhanced MR-Mammography, T. Vomweg, D. Mayer, H. Faber, **M. Buscema**, E. Grossi, M. Mattiuzzi, pubblicazione interna Workshop Istituto Superiore di Sanità, 13.12.2004.

138.   The potential role played by Artificial Adaptive Systems in enhancing our under standing of Alzheimer Disease, E. Grossi, **M. Buscema**, Neuroscience Research Communications, 2004, vol. 35, n. 3, pp: 246-268.

139.   Artificial Neural Networks for the Prediction of Diabetes Mellitus Occurrence in Patients Affected by Chronic Pancreatitis, N. Pagano, **M. Buscema**, E. Grossi, M. Intraligi, G. Massini, Salacone P., Gaia E., Journal of the Pancreas online, 2004, vol. 5, n. 5 supplement, p: 422. 2004

140.   Artificial Neural Networks and Artificial Organisms can predict Alzheimer pathology in individual patients only on the basis of cognitive and functional status, Buscema M, Grossi E, Snowdon D, Antuono P, Intraligi M, Maurelli G, Savarè R, Neuroinformatics, Humana Press, 2004, vol. 2 n. 4, pp: 399-416.

141.   Recognition of patients with cardiovascular disease by Artificial Neural Networks, D. Baldassarre, E. Grossi, **M. Buscema**, M. Intraligi, M Amato, E. Tremoli, L. Pustina, S. Castelnuovo, S. Sanvito, L. Gerosa, CR Sirtori, in Annals of Medicine; 36: pp. 630-640, 2004.

142.   Genetic Doping Algorithm (GenD). Theory and Applications, **M. Buscema**, in Expert Systems, May 2004, Vol. 21, No. 2, pp. 63-79.

143.   Improved Understanding of Urban Sprawl Using Neural Networks, L. Diappi, P. Bolchim, **M. Buscema**, nel volume "Recent Advances in Design and Decision Support Systems in Architecture and Urban Planning" a cura di J.P. Van Leeuwen & H.J.P. Timmermans, Kluwer Academic Publishers, Dordrecht, The Netherlands, 2004.

144.   Complexity in Sustainability: an Investigation of the Italian Urban System through Self-Reflexive Neural Networks, **M. Buscema**, M Breda, S Terzi, nel volume "Evolving cities" a cura di L. Diappi, Ashgate Publishing, England, 2004.

145.   Seminars on Artificial Intelligence in Medicine, **M. Buscema**, Enzo Grossi, in Bracco – Semeion Collection, Vol. 1, December 2003.

146.   Filosofia dei Sistemi Artificiali Adattivi, **M. Buscema**, M. Intraligi in Dedalo, Vol. 1 n. 2 December 2003.

147.   Improved Artificial Neural Networks in Dignity Prediction of Enhancing Lesions in Contrast-Enhanced MR-Mammography con T.W.Vomweg, **M. Buscema**, H.U. Kauczor, A. Teifke, M. Intraligi, S. Terzi, C.P. Heussel, T. Achenbach, M. Thelen, in Medical Physics, 30 September 2003.

148.   Using Artificial Neural Networks for effective Police Deviance and Corruption Intervention Planning, Implementation and Assessment, in "Police Corruption: Paradigms, Models and Concepts Challenges for Developing Countries", S. Einstein, M. Amir (eds), **M. Buscema**, Office of International Criminal Justice (OICJ) 2003, Sam Houston State University, USA, pp. 253-304.

SEMEION

149. The contribution of artificial neural networks to the classification and treatment of patients with uninvestigated dyspepsia con A. Andriulli, E. Grossi, **M. Buscema**, V. Festa, N. Garba¬gna, M. Intraligi, P. Dominici, R. Cerutti, F. Perri, on behalf of the "N.U.D. look" Study Group, in Digestive and Liver Disease, volume 35, n. 4. April 2003 pp. 222- 231.

150. Use of Artificial Networks in Clinical Trials: A Pilot Study to Predict Responsiveness to Donepezil in Alzheimer's Disease, con P. Mecocci, E. Grossi, **M. Buscema**, M. Intraligi, R. Savarè, P. Rinaldi, A. Cherubini e U. Senin, in JAGS (Journal of American Geriatric Society), vol. 50, n. 11, November 2002, pp.1857-18620.

151. Arti e scienze dell'artificiale, **M. Buscema**, in DNArt – I Biennale Merano arte, June-September 2002, De Agostini Rizzoli ar¬te&cultura, pp. 32-37.

152. A brief Overview and Introduction to Artificial Neural Networks, **M. Buscema**, in Substance Use & Misuse, Special Issue on The Middle Eastern Summer Institute on Drug Use – Proceedings: 1997/1999, Vol. 37 (8-10), June-August 2002, Marcel Dekker, Inc., New York, 2002, pp.1093-1148.

153. Palestinesi e israeliani fatevi martiri della pace, **M. Buscema**, in Avvenire, 25 April 2002.

154. Conclusioni sul processo di validazione, **M. Buscema**, in M. Buscema & Semeion Research Group, Reti Neurali Artificiali per l'orientamento professionale, Franco Angeli, Milano, 2002, pp. 279–282.

155. Le Competenze Specifiche, in **M. Buscema** & Semeion Research Group, Reti Neurali Artificiali per l'orientamento professionale, Franco Angeli, Milano, 2002, pp. 261–278.

156. Dalle Competenze Generiche alle Macro Professioni, **M. Buscema**, in M. Buscema & Semeion Research Group, Reti Neurali Artificiali per l'orientamento professionale, Franco Angeli, Milano, 2002, pp. 243–259.

157. Dal Questionario Tattico alle Competenze Generiche, **M. Buscema**, in M. Buscema & Semeion Research Group, Reti Neurali Artificiali per l'orientamento professionale, Franco Angeli, Milano, 2002, pp. 189–196.

158. Il metodo: le Reti Neurali Artificiali (introduzione, struttura e dinamica, modelli), **M. Buscema**, in M. Buscema & Semeion Research Group, Reti Neurali Artificiali per l'orientamento professionale, Franco Angeli, Milano, 2002, pp. 133–186.

159. La stima delle funzioni, **M. Buscema**, in M. Buscema & Semeion Research Group, Reti Neurali Artificiali per l'orientamento professionale, Franco Angeli, Milano, 2002, pp. 53–72.

160. Competenze e lavoro, **M. Buscema**, in M. Buscema & Semeion Research Group, Reti Neurali Artificiali per l'orientamento professionale, Franco Angeli, Milano, 2002, pp. 39–52.

161. Le Competenze Elementari, **M. Buscema**, in M. Buscema & Semeion Research Group, Reti Neurali Artificiali per l'orientamento professionale, Franco Angeli, Milano, 2002, pp. 21–38.

162. Lavoro e personalità: un problema di ottimizzazione, **M. Buscema**, in M. Buscema & Semeion Research Group, Reti Neurali Artificiali per l'orientamento professionale, Franco Angeli, Milano, 2002, pp. 17–19.

163. Artificial neural network assessment of substitutive pharmacological treatments in hospitalised intravenous drug users, con M. C. Grassi, A. M. Caricati, M. Intraligi, **M. Buscema** e P. Nencini, in Artificial Intelligence in Medicine, Vol. 24, 2002, Elsevier, Pp. 37-49.

164. Utilizzo delle reti neurali artificiali nei trial clinici: studio pilota per valutare la responsività al donepezil in pazienti con malattia di Alzheimer utilizzando un sistema di reti neurali, con P. Mecocci, E.Grossi, **M. Buscema**, M. Intraligi, V. Serafini, R. Savarè, P. Rinaldi, A. Cherubini e U. Senin, Neurological Science, 2001, Springer Verlag, pp. 49-53.

SEMEION

165. Toward an integrative approach in the analysis of dependency problems, con S. Larsson, J. Lilja, S. Borg, **M. Buscema** e D. Hamilton, in Substance Use & Misuse, Vol. 36 (9&10), July-August 2001, Marcel Dekker, Inc., New York, 2001, pp. 1323-1356.

166. Ecologie della socialità e dell'identità: la complessità comportamentale in un'economia post–industriale, **M. Buscema**, P.Luigi Sacco, in Kéiron, Vol. 7, June 2001, Edizione Farmindustria, Rome. Pp. 116–127.

167. Reti neurali artificiali nelle tossicodipendenze, **M. Buscema**, in Personalità/Dipendenze, Vol. 7(1), April 2001, Erit–Italia e SDP, Mucchi Editore, Modena. Pp. 17–22.

168. Feedforward networks in financial predictions: the future that modifies the present, **M. Buscema** P.Luigi Sacco, in Expert Systems, Vol.17(3), August 2000, Blackwell, Oxford UK. Pp.149-170.

169. Redes neuronales y problemas sociales, **M. Buscema**, in Addiciones, Vol. 12(1), 2000, Socidrogalcohol, Palma de Mallorca, Spagna, pp.99-126.

170. Artificial Neural Networks e loro applicazioni in medicina delle Tossicodipendenze, **M. Buscema** in Annali dell'Istituto Superiore di Sanità Vol 36 n 1, 2000, pp. 77-85, Rome.

171. La costruzione adattiva dell'obiettività nelle Scienze Sociali: le Reti Neurali come strumento di inferenze diagnostica, **M. Buscema** in Keiron, Farmindustria, n 3 April 2000, pp.122-139, Rome.

Reasearch Software from 2000

1. M Buscema, Missing Net (v 1, Massimo Buscema, 2015) Semeion Software n. 69.

2. M Buscema, AWIT (A What If Theory, v 1, 2014). Semeion Software n. 68.

3. M Buscema, Hubness (v 1.5, Massimo Buscema, 2015) Semeion Software n. 67.

4. M Buscema, MST index (v 1.4, Massimo Buscema, 2014). (Semeion Software n. 66).

5. M Buscema, Dynamic Naive Bayes (v 1.1, 2014). (Semeion Software n. 65).

6. M Buscema, Quakes (v 4.5, Massimo Buscema, 2012). Semeion Software n. 63.

7. M Buscema, Multi Metric Adaptive KNN (v 2.5, Massimo Buscema). Semeion Software n. 62.

8. M Buscema, Simple Adaptive KNN (v 2.0, Massimo Buscema). Semeion Software n. 61.

9. M Buscema, Metrics Machine, ver. 1.5. Semeion Software n. 60, 2012.

10. M Buscema, Auto Contractive Maps with Hyper Composition CM-HC (ver. 1.0, 2012), Semeion Software n. 59.

11. M Buscema, Path Net (ver. 3.1, 2011), Semeion Software n. 58

12. M Buscema, NNR Result Analysis (ver. 4.0, 2011), Semeion Software n. 57

13. M Buscema, Metanet Munti-Train (v. 1.0, 2010), Semeion Software n. 55

14. M Buscema, ACF (v. 3.5, 2010), Semeion Software n. 54

15. M Buscema, Twisting Theory (v. 2.0, 2010), Semeion Software n. 53

16. M. Buscema, P-Fast (v. 4, 2009), Semeion Software n. 52

17. M. Buscema, Modular Auto-Associative ANNs (v. 1.0, 2009), Semeion Software n. 51

18. M. Buscema, Supervised Meta Auto-Associative ANN (v. 1.0, 2008), Semeion Software n. 50

19. M. Buscema Sort Index (v 0.5, 2008), Semeion Software n. 49

20. M. Buscema, Auto-poietic networks (v 2.1, 2007-2008), Semeion Software n. 48

21. M. Buscema, SOM Maps and Errors, v 1.5 (2007-2008), Semeion Software n. 47

22. M. Buscema, ALOC CS (At Least One Connection), v. 5 (2005-2009), Semeion Software n. 45

23. M. Buscema, Meta Net, v. 5 (2007-2009), Semeion Software n. 44

24. M. Buscema, Hidden Input Discovery, v. 1 (2007), Semeion Software n. 43

25. M. Buscema, ACM Color v.1 (2007), Semeion Software n. 41

26. M. Buscema, Twist, Input Search & T&T Reverse v. 2 (2007), Semeion Software n. 39

SEMEION

27. M. Buscema, MST v. 6.0 (2006-2009), Semeion Software n. 38
28. M. Buscema, GenD Cluster v. 3 (2006), Semeion Software n. 37
29. M. Buscema PVT 3D v 3.0, (2013) Semeion Software n. 36

30. M. Buscema, PST Cluster, v. 10.5 (2006-2009), Semeion Software n. 34
31. M. Buscema, ACM Batch v. 4b (2006-2008), Semeion Software n. 33
32. M. Buscema, IFAST- AutoAssociative Metatask, v. 8 (2005-2009), Semeion Software n. 32
33. M. Buscema, Visual DB v. 7 (2005-2009), Semeion Software n. 31
34. M. Buscema, MOS (Maps Organizing System) v 2.0 (2002-2003), Semeion Software n. 26
35. M. Buscema, Supervised Recall, v. 6.5 (2003), Semeion Software n. 24
36. M. Buscema, Genetic Optimizer v 1.0 (2003), Semeion Software n. 22
37. M. Buscema, Eco Net v 1.0 (2003), Semeion Software n. 21
38. M. Buscema, Auto Associative Recall (2001-2005), Semeion Software n. 20
39. M. Buscema, PST-Recall (2001-2005), Semeion Software n. 17
40. M. Buscema, T&T (Training & Testing) v 3.0 (2001-2005), Semeion Software n. 16
41. M. Buscema, Contractive Maps v 2.0 (2000-2002), Semeion Software n. 15
42. M. Buscema, Constraints Satisfaction Networks, v. 12 (2001-2009), Semeion Software n. 14
43. M. Buscema, Auto Associative, v. 10 (1999-2008), Semeion Software n. 13
44. M. Buscema, Supervised ANNs and Organism v. 15 (1999-2009), Semeion Software n. 12
45. M. Buscema, PST v. 9.1 (1999-2009), Semeion Software n. 11
46. M. Buscema, Genetic Doping TSP (1998-2006) v. 3.0, Semeion Software n. 10

Patents
1. **Active Connection Fusion (ACF):** A new class of Algorithms for Image fusion. **Applicant:** Semeion Research Center & CSI. **Inventor**: M Buscema.
    1.USA Patent: S/N 13/085,240. Deposited April 12 2011

2. **Target Diffusion Model (T.D.M.)**: An algorithm to model the causation process of a discrete process. **Applicant:** Semeion Research Center & CSI. **Inventor:** M Buscema.
    1.   USA Patent: 13/070,854. Deposited 24 March 2011.

3. **Twisting Theory (TWT):** a new theory and a new class of Algorithms able to model the global deformations of the space, considering the trajectories of only a little sample of points along the time flow. **Applicant :** Semeion Research Center & CSI. **Inventor:** M Buscema.
    1.USA Patent : 12/969,887 . Deposited 16-Dec-2010.

4. **Harmonic Center** A new class of algorithms able to define from a sample of points distributed into 2 or 3 dimensional space the different membership of harmonics of any geometrical point of the surface. **Applicant:** Semeion Research Center. **Inventor:** M Buscema.
    1.USA Patent: 12/969,620 . Deposited 16-Dec-2010.

5. **Recurrent MST:** A new class of algorithms able to define from a sample of points distributed into 2 or 3 dimensional space the set of the geometrical points implicated from that distribution. **Applicant:** Semeion Research Center. **Inventor:** M Buscema.
    1.USA Patent: 12/969,673 . Deposited 16-Dec-2010

6. **Pick & Squash Tracking** An Algorithm for projecting information data belonging to a multidimensional space into a space having less dimensions a method for the cognitive analysis

SEMEION

of multidimensional information data based on the said algorithm and a program comprising the said algorithm stored on a recordable support. **Applicant** Semeion Research Centre **Inventor** M. Buscema

1. **International Patent**: Application n. PCT/EP2004/051190 deposited 06-22-2004.
2. **USA Patent US 7,792,869 B2 Sep. 7, 2010.**

7. **Sine Net :** AN ARTIFICIAL NEURAL NETWORK. **Applicant** Semeion Research Centre. **Inventor** M. Buscema
    1. **European Patent**(Application n. 03425582.8 deposited 09-09-2003).
    2. **USA Patent No US 7,788,196 B2 - Aug.31,2010.**
    3. **International Patent:** Application PCT/EP2004/05189 deposited 08-28-2004.

8. **Training & Testing System :** System and method for optimisation of a database for the training and testing of prediction algorithms. **Applicant** Semeion **Inventor** M. Buscema
    1. **USA Patent US7,711,662 B2 – May 4 2010 (**Application n. US60/440,210 deposited 01-15-2003).
    2. **International Patent :** Application n. PCT/EP04/00157 deposited 01-13-2004

9. **Guacamole:** A population of Unsupervised ANNs able to perform supervised pattern recognition. **Applicant** Semeion Research Center. **Inventor:** M Buscema.
    1. **European Patent:** 09425114.7 deposited 20/03/2009.

10. **Pixel Vector Theory** A method for encoding image pixels, a method for processing images and a method for processing images aimed at qualitative recognition of the object reproduced by one or more image pixels. **Applicant** Semeion. **Inventor** M. Buscema
    1. **European Patent :** Application n. 02425141.5 deposited 03-11-2002;
    2. **International Patent** :Application n. PCT/EP03/02400 deposited 03-10-2003;
    3. **USA Patent US 7,672,517 B2 – Mar 2 2010.**
    4. **China patent n. 478548, 18-03-2009**
    5. **Japan patent n. 4303598, 01-05-2009**

11. **Genetic Doping Algorithm for Resolution Travelling Sales Person Problem** Method and system to evaluate the cognitive performance of an individual. **Applicant** Semeion - Bracco. **Inventor** M. Buscema & E. Grossi
    1 **International Patent**: Application n. PCT/IT01/00542 deposited 10-24-2001.
    2 **Japan patent** n. 4085061, 22-02-2008

12. **Active Connection Matrix J-Net** An algorithm to recognize relationships between data of a database and a method for image pattern recognition based on the said algorithm. **Applicant** Semeion Research Center **Inventor** M. Buscema
    1. **European Patent**: Application n. 07425419.4 deposited 07-06-2007.

13. **Implicit Function As Squashing Time** Method of processing multichannel and multivariate signals and method of classifying sources of multichannel and multivariate signals operating according to such processing method **Applicant** Semeion Research Centre **Inventor** M. Buscema
    1. **International Patent**: Application n. PCT/EP2007/055646 deposited 06-08-2007
    2. **European Patent:** Application n. 06115223.7 deposited 06-09-2006.

15

14. **Active Connection Matrix** An algorithm for recognizing relationships between data of a database and a method for image pattern recognition based on the said algorithm. **Applicant** Semeion Research Centre **Inventor** M. Buscema
    1. **European Patent** : Application n. 03425559.6 deposited 08-22-2003.
    2. **International Patent :** Application n. PCT/EP2004/05182 deposited 08-18-2004.

Books

1. **Intelligent Data Mining in Law Enforcement Analytics**, con Tastle W. (Eds), Springer, January 2013.
2. **Data Mining Applications Using Artificial Adaptive Systems**, con Tastle W. (Ed), Springer, January 2013.
3. **Advanced Networks, Algorithms and Modeling for Earthquake Prediction,** with Marina Ruggieri (Eds), River Publishers, 2011.
4. **Applications of Mathematics in Models, Artificial Neural Networks and Arts - Mathematics and Society**, with V. Capecchi, P. Contucci, B. D'Amore (Eds.), Springer, 2010.
5. **Artificial Adaptive Systems in Medicine: New Theories and Models for New Applications,** with E. Grossi, Bentham Science Publishers, E-Book, 2009.
6. **L'Immagine della Criminalità nei Mass-Media - Semeion Technical Paper 1/2,** with G. Massini, Aracne Editore, Roma 2008.
7. **Sistemi ACM e Imaging Diagnostico – Le immagini mediche come Matrici Attive di Connessioni,** Springer Verlag, Milano, 2006.
8. **Ricerca Scientifica e Innovazione. Le parole chiave**, Rubbettino, Soveria Mannelli (CZ), 2004.
9. **Ricerca Scientifica e Innovazione. Le parole chiave**, Rizzoli, Milano, 2003.
10. **Reti Neurali Artificiali per l'orientamento professionale,** Franco Angeli Editore, Milano 2002.
11. **Reti Neurali Artificiali e Sistemi Sociali Complessi.** Volume II **Applicazioni,** Franco Angeli Editore, Milano 1999.
12. **Reti Neurali Artificiali e Sistemi Sociali Complessi.** Volume I **Teoria e modelli,** Franco Angeli Editore, Milano 1999.
13. **Artificial Neural Networks and Complex Social Systems**, (Massimo Buscema Guest Editor) Special Issue of Substance Use & Misuse, Volume 33, **III Applications**, Marcel Dekker, Inc., New York, Basel, Hong Kong, 1998.
14. **Artificial Neural Networks and Complex Social Systems**, (Massimo Buscema Guest Editor) Special Issue of Substance Use & Misuse, Volume 33, **II Models**, Marcel Dekker, Inc., New York, Basel, Hong Kong, 1998.
15. **Artificial Neural Networks and Complex Social Systems**, (Massimo Buscema Guest Editor) Special Issue of Substance Use & Misuse, Volume 33, **I. Theory**, Marcel Dekker, Inc., New York, Basel, Hong Kong, 1998.
16. **Reti Neurali e Finanza. Esercizi, Idee, Metodi e Applicazioni** (with F. Matera, T. Nocentini e P. L. Sacco), Quaderni di Ricerca n. 2, Armando Editore, Roma, 1997.
17. **Idee da Buttare**, Edizioni Sonda, Torino, 1994.
18. **Reti Neurali AutoRiflessive. Teoria, Metodi, Applicazioni e Confronti**, with G. Didoné e M. Pandin, Quaderni di Ricerca n. 1, Armando Editore, Roma, 1994.
19. **Squashing Theory: Modello a Reti Neurali per la Previsione dei Sistemi Complessi**, Collana Semeion, Armando Editore, Roma 1994.

SEMEION

20. **Il Modello MQ**: **Reti Neurali e Percezione Interpersonale**, with G. Massini, Collana Semeion, Armando Editore, Roma, 1993.

21. **Il Progetto Sonda. La Prevenzione dai Comportamenti Auto ed Etero-distruttivi**, Edizioni Semeion, Roma, 1992.

22. **Prevenzione e Dissuasione**, Edizioni Gruppo Abele, Torino, 1986.

23. **Comunicazione Dissuasiva**, with G. Bartolomucci, Comune di Roma, Assessorato ai Servizi Sociali, 1986.

24. **Il Film a Luci Rosse** (Curatore), Libero Scambio Editore, Firenze, 1982.

25. **Analisi Semiotica del Telegiornale**, voll. I e II, VPT/RAI Edizioni ERI, Torino, 1982.

SEMEION