

VITA - ROBERT KOZMA

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Degree History:

1989 - 1992 **Ph.D. in Applied Physics**, Delft University of Technology, The Netherlands
1983 - 1988 **M.Sc. in Applied Mathematics** (with Honors), Eotvos University, Budapest, Hungary
1976 - 1982 **M.Sc. in Power Engineering** (with Distinction), Moscow Institute of Power
Engineering, Russia, Soviet Union

Professional Experience

2005 – Present **Professor of Computer Science, University of Memphis**
Department of Computer Science
Visiting appointments:
- US Air Force Research Laboratory, Sensors Directorate, Hanscom AFB, MA –
NRC Senior Research Fellow (2006, 2007, 2008)
- Lawrence Berkeley National Laboratory, LBNL/UCB, Berkeley, CA - Visiting
Professor (2006)
- Sarnoff Corporation, Princeton, MA – Consultant (2005)
- NASA Jet Propulsion Laboratory, California Institute of Technology, Pasadena,
CA - Visiting Professor (2005)

2003 - 2005 **Professor of Computer Science, University of Memphis**
Dept. of Mathematical Sciences, Division of Computer Science

2000 - 2003 **Associate Professor, University of Memphis**, Dept. of Mathematical Sciences,
Division of Computer Science, and Institute for Intelligent Systems

1998 - 2000 **Associate and Assist Researcher**, University of California at Berkeley, joint
appointment at Division of Neurobiology and Division of Computer Science

1996 - 1998 **Lecturer (=Asst. Professor), University of Otago**, Dunedin, New Zealand,
Department of Information Sciences, Knowledge Engineering Laboratory

1993 - 1996 **Associate Professor, Tohoku University**, Sendai, Japan
Dept. of Quantum Science and Engineering, Machine Intelligence Laboratory

Spring, 1993 **Visiting Researcher, Tohoku University**, Sendai, Japan
Graduate School of Engineering

1988 - 1993 **Research Fellow, Delft University of Technology**, Delft, The Netherlands
Department of Applied Physics, Interfaculty Reactor Institute

1982 - 1988 **Research Assistant and Research Fellow at Central Research Institute for Physics**
of the Hungarian Academy of Sciences, Budapest, Hungary

Honors and Memberships of Professional Societies:

- *Board of Governors [2004-2007, 2007-2009]* International Neural Network Society INNS
- *NRC Senior Research Fellow*, National Research Council, National Academies of Sciences & Engineering (2006-2008)
- *SIG Chair*, Special Interest Groups, of International Neural Network Society (since 2005)
- *Senior Member*, Institute of Electrical and Electronic Engineers IEEE (since 1998)
- *Committee Member*, Neural Networks Technical Committee IEEE Neural Networks/Computational Intelligence Society (NNS/CIS NNTEC), (since 1996)
- *MTA-SOROS Fellowship Award*, New York (1988, 1986)
- *Higher Education Award*, Ministry of Education, Budapest, Hungary (1983)
- *Diploma with Distinction* ('red'), Moscow Energy University, Russia, (1982)

- *1st Prize Award for Best Research Work of Graduate Students (1982)*

Research Funding:

- “EFRI-COPN: Cognitive optimization and prediction via CNN wave computing dynamics,” PI: Leon Chua (UCB), Co-PI: R. Kozma (UoM), W.J. Freeman (UCB). NSF/Emerging Frontiers Initiative, Pending (2008-2012).
- “Kinesis-Speech Driven Human-Robot Interface for Complex Robotic Tasks,” PI: M. Yeasin (UoM), Co-PI: R. Kozma, K. Iftekharuddin (UoM), NSF, Pending (2008-2011).
- “Dynamic Logic for Information Fusion using Distributed and Multi-Modal Sensory Agents with Emergent Cognitive Behaviors,” awarded by National Research Council to R. Kozma, USAF Research Laboratory, Sensors Directorate (2007-2008).
- “Neurodynamics of Perception and Cognition,” awarded by General Dynamics Information Technology GDIT Inc, AFRL, PI: R. Kozma (2007 – 2008).
- “Brain Network Dynamics,” PI: V. Menon (Stanford), Co-PI: R. Kozma, S. Bressler (FAU), R. Knight (Berkeley), Conference organization funded by NSF Cognitive and Behavioral Program (2007).
- “Large Scale Random Graphs Methods for Modeling Mesoscopic Behavior in Biological and Physical Systems,” PI: R. Kozma, Co-PI: B. Bollobas, NSF US-Hungarian Workshop, funded by NSF International Office (2006-2007).
- “Dynamical Approach to Behavior-Based Robot Control & Autonomy,” funded by NASA, for R Kozma, unused project with H. Seraji, Head, Intelligent Robot Control Lab, NASA/JPL, Pasadena (2006-2007).
- “Dynamical Behavior in Percolation Models Related to Phase Transitions during Sensory Information Processing,” PI: R. Kozma, Co-PI: B. Bollobas, W.J. Freeman (Berkeley), NSF, Biologically-Inspired Computing Program (2002-2006).
- “SODAS: Models of Self-organizing Ontogenetic Development of Autonomous Agents,” PI: R. Kozma. Awarded by NASA, Computing, Information and Communicating Technology CICT Program, Revolutionary Computation Project (2001-2004).
- “Developing Autotutor for Computer Literacy and Physics,” NSF ROLE Grant, PI: A. Graesser, R. Kozma (co-PI, 10%) (2001-2002).
- “Modeling of spatial and temporal dynamics in biological olfactory systems.” Funded by: ONR/DEPSCOR, PI: J.M. Zurada (Louisville), R. Kozma (Consult) (2000-2002).
- “Use of EEG Attractor Reconstruction to Analyze Nonlinear Brain Dynamics,” Funded by ONR/Cognitive and Neural Sciences, PI: W.J.Freeman (Berkeley), R. Kozma (Consult) (1999-2000).
- “Connectionist Based Intelligent Information Systems CBIIS,” PI: N. Kasabov, Co-PI: R. Kozma, Funded by New Zealand Foundation for Research, Science & Technology FoRST, Public Good Science Fund PGSE, moved from NZ (1998-2002)

Other professional positions:

- ◆ *General Chair, Program Chair/Co-Chair at conferences:*

- *General Chair*, IEEE/INNS International Joint Conference on Neural Networks, IJCNN09 (June 15-19, 2009, Atlanta, GA);
 - *Program Co-Chair at IEEE World Congress on Computational Intelligence WCCI08* (June 1-6, 2008, Hong Kong);
 - *Program Co-Chair*, Conference on Brain Network Dynamics (January 26-27, 2007, Stanford-Berkeley, CA, USA)
 - *Chair for Finances/Treasurer*, IEEE World Congress of Computational Intelligence WCCI 2006 (July 16-20, 2006, Vancouver, Canada);
 - *Program Co-Chair* of NSF US-Hungarian Workshop on Large Scale Random Graphs Methods for Modeling Mesoscopic Behavior in Biological and Physical Systems, August 28 – September 4, 2006, Budapest, Hungary.
 - *Program Co-Chair*, IEEE/INNS International Joint Conference on Neural Networks IJCNN'04 (July 25-29, 2004, Budapest, Hungary);
 - *Program Committee Co-Chair*, International Conference on Neural Information Processing ICONIP'97 (November, 1997, Dunedin, New Zealand).
- ◆ *Program Committee member* at international conferences:
- International Conference on Simulation of Adaptive Behavior SAB08 (July 7-12, 2008, Osaka, Japan)
 - International Conference on Cognitive Neurodynamics (November 17-21, 2007, Shanghai, China)
 - Artificial Neural Networks in Engineering Conference ANNIE07 (November 11-14, 2007, St. Louis, MO)
 - Int. Joint Conf. Neural Networks IJCNN'07 (Aug. 12-17, 2007, Orlando, FL),
 - Cognitive Science Conference CogSci'07 (Aug. 1-4, 2007, Nashville, TN)
 - International Symposium on Artificial Brain with Emotion & Learning (Aug. 24-25, 2006, Seoul, Korea)
 - Cognitive Science Conference CogSci'06 (July 26-29, 2006, Vancouver, Canada)
 - Int. Joint Conf. Neural Networks IJCNN'05 (July 31-Aug. 4, 2005, Montreal, Canada),
 - IEEE Int. Conf. On Fuzzy Systems FUZZ-IEEE 2005 (May 22-25, 2005, Reno, NV)
 - IEEE Systems, Man, and Cybernetics Conf. SMC'05 (October 10-12, 2005, Hawaii),
 - 2004 Symposium on Intentional Dynamic Systems IDS04 (April 24-26, 2004, Memphis, TN)
 - Int. Joint Conf. Neural Networks, IJCNN'03 (July 14-19, 2003, Portland, OR),
 - IEEE Int. Conf. On Fuzzy Systems FUZZ-IEEE 2003 (May 28-30, 2003, St. Louis, MO);
 - Int. Joint Conf. Neural Networks, IJCNN'02 (May 11-15, 2002, Honolulu, HI);
 - Int. Joint Conf. Neural Networks, IJCNN'01 (July 14-19, 2001, Washington DC);
 - Int. Joint Conf. Neural Networks, IJCNN'99 (July 10-16, 1999, Washington DC);
 - North American Fuzzy Information Processing Soc. NAFIPS'99 (June 11-13, 1999, New York);
 - IEEE Int. Conf. Systems, Man and Cybernetics, SMC'97 (October 1997, Orlando, FL);
- ◆ *Invited /Special Session Chair, Speaker, Panelist*, including:
- *Plenary Speaker*: “Cognitive Phase Transitions in Brains: Models and Applications,” Artificial Neural Networks in Engineering Conference ANNIE07 (November 11-14, 2007, St. Louis, MO)
 - *Special Session Organizer*: “Neurodynamics: from neurons to higher cognitive functions,” jointly with P. Andras (Newcastle), IJCNN 2007 (Aug. 12-17, 2007, Orlando, FL).
 - *Workshop Organizer*: “Nonlinear Brain Dynamics for Computational Intelligence,” 10th Joint Conference on Information Science JCIS07, July 19-24, 2007, Salt Lake City, UT.
 - *Symposium Organizer*: “Dynamical Systems Approaches in Neuroscience: Theory, Experiments, and Applications,” Symposium organized at 6th International Congress on Industrial and Applied Mathematics ICIAM'07 (16-20, July, 2007, Zurich, Switzerland).
 - *Panelist*: “SBIR/STTR Phase I, Tools for Collaboration Panel,” NSF Industrial and Innovation Partnerships,” (February, 2007, September 2007, Arlington, VA)

- *Invited Talk*: “Modeling Cortical Phase Transitions,” at NSF Conference on Brain Network Dynamics (January 26-27, 2007, Berkeley, CA).
- *Invited Talk*: “Phase Transition Models of Intentional Cortical Dynamics,” Conference on Goal-Oriented Neural Systems (November 3-4 2006, Arlington, TX).
- *Panelist*: Computer Modeling and Mathematics Panel at NSF Workshop “Large Scale Random Graphs Methods for Modeling Mesoscopic Behavior in Biological and Physical Systems,” Renyi Institute of Mathematics (August 29, 2006, Budapest, Hungary).
- *Special Track Organizer*: "Neurodynamics of Higher-level Cognitive Behavior," jointly with Leonid Perlovsky at the *IEEE 2006 World Congress on Computational Intelligence* (July 16-20, 2006, Vancouver, Canada).
- *Workshop Organizer*: “Neurodynamics Methods for Analysis and Control of Cognitive Behaviors,” jointly with A. Seth (NSI, CA) J. Tani (RIKEN, Japan) at *10th Artificial Life Conference ALIFEX* (June 3-7, 2006, Bloomington, IN).
- *Keynote Talk*: “Neuropercolation Model of Cortical Phase Transitions – Dynamics of Cognition and Intelligence,” Chaos & Complex Systems Symposium (May 12-13, 2006, Istanbul, Turkey).
- *Invited Talk*: “Dynamical Systems Approach to Intentional Robots,” At Dept. EE & CS, UC Berkeley, BISC Berkeley Initiative on Soft Computing Seminar Series (February 28, 2006, Berkeley, CA).
- *Invited Talk*: “Dynamical Systems and Intelligent Behavior,” at Florida Atlantic University, Complex Systems and Brain Sciences Institute (January 16, 2006, Boca Raton, FL).
- *Invited Talk*: “SODAS – A Dynamical Systems Approach to Robot Intelligence and Autonomy Applied to Sample Return Rover SRR Platform,” at JPL Robot Autonomy Division (Sept. 15, 2005, Pasadena, CA)
- *Invited Talk*: “Neuropercolation – Dynamical Approach to Autonomy,” Neuroscience Institute NSI Seminar (Sept. 8, 2005, La Jolla, CA).
- *Invited Talk*: “Self-Organized Development of Autonomous Adaptive Systems,” Distinguished Lecturer at Navy Center of Applied Research in Artificial Intelligence NCARAI, Navy Research Laboratory NRL (May 9, 2005, Arlington, VA).
- *Special Session Organizer*: “Neurodynamics and Intentional Dynamic Systems,” at IEEE Int. Conf. on Neural Networks, IJCNN’05 (August 4, 2005, Montreal, Canada).
- *Workshop Chair*: “Nonlinear Spatio-Temporal Neural Dynamics,” at Int. conf. Computational Neuroscience CNS*2004 (Baltimore, MD, July 21, 2004).
- *Plenary Talk*: “Nonconvergent Neural Memories for Robust Encoding of Noisy Sensory Data,” at ANNIE’2003 Conference (November 2-5, 2003, St. Louis, MO).
- *Invited Talk*: “Biologically Inspired Computing – Past, Present, & Future,” at Institute of Complex Systems (Kalamazoo, MI, October 13, 2003).
- *Panelist*: “Biologically Inspired Computational Models,” Discussion Panel at IJCNN’03 (July 20-24, 2003, Portland, OR).
- *Tutorial Speaker*: “Neuropercolation: Dynamical memory neural Networks – Biological Systems and Computer Implementations,” Tutorial at IJCNN’03 with W.J. Freeman (July 14, 2003, Portland, OR).

- *Special Track Organizer*: “Temporal Aspects of Information Encoding in NNs,” Special Track with 3 sessions, co-organizer with Deliang Wang and Ali Minai, at IJCNN'03 (July 14-19, 2003, Portland, OR).
- *Workshop Organizer*: “Nonlinear Spatio-temporal Neurodynamics,” organized with Peter Andras and Peter Erdi at Computational Neuroscience Conference CNS*2003 (July 4-8, 2003, Alicante, Spain).
- *Invited Talk*: “Dynamical Cognitive Principles, Models, and Implementations,” at NSF Conference on Advanced Computation Inspired By Biological Processes (April 6-8, 2003, Arlington, VA).
- *Special Session Organizer*: “Nonlinear Neurodynamics,” co-organized with Walter Freeman, at IJCNN'02 (May 11-15, 2002, Honolulu, HI).
- *Panelist*: "Your Method is Connectionist Too", at World Congress on Computational Intelligence WCCI'02/IJCNN'02 (May 11-15, 2002, Honolulu, HI).
- *Special Session Organizer*: “Noisy Chaotic Neural Networks for Information Storage and Retrieval,” at IEEE Int. Joint Conference on Neural Networks IJCNN2001 (July 24-27, 2000, Como, Italy).
- *Panelist*: “Facing up to the 'AI Problem': Neural Networks and High-level Intelligence and Cognition,” Panel at IEEE International Joint Conference on Neural Networks (July 10-16, 1999, Washington DC).
- *Panelist*: “Grand Challenges to Neural Networks Community,” Panel at IEEE World Congress on Computational Intelligence WCCI98 (May 5-9, 1998, Anchorage, AK).
- *Invited Session*: “Integration of Hybrid Methods for Artificially Intelligent Neural Networks,” at IEEE World Congress on Computational Intelligence (May 5-9, 1998, Anchorage, AK).
- *Invited Session*: “Hybrid Connectionist Systems for Knowledge Monitoring,” at IEEE Int. Conf. Syst. Man Cybern. SMC'97 (October 12-15, 1997, Orlando, FL).
- *Special Session Organizer*: “Knowledge Monitoring by Neuro-Fuzzy Methods,” at IEEE Int. Conf. Neural Networks, ICNN'97 (June 8-12, 1997, Houston, TX).

Editing and Reviewing in international journals:

Journal Editorial Boards:

- *Associate Editor* IEEE Transactions on Neural Networks (IEEE)
- *Associate Editor* Neurocomputing (Elsevier)
- *Associate Editor* Cognitive Neurodynamics (Springer)
- *Area Editor* (Computational Brain Science), New Mathematics and Natural Computation (World Scientific)
- *Co-Editor-In-Chief* Neural Networks Tri-Society Newsletters, Co-editing with Harold Szu /ONR (Elsevier)

Journal Special Issues Edited:

- International Journal of Intelligent Systems, Vol. 21, No. 9. pp. 875-1043, 2006
Intentional Dynamic Systems: Fundamental Concepts and Robotics Applications (R. Kozma and T. Fukuda, co-editors)
- IEEE Transactions on Neural Networks, Vol. 15, No. 5, pp. 953 – 1227, 2004.
Temporal Coding for Neural Information Processing (Wang, D.L., Freeman, W.J., Kozma, R., Lozowski, A.G., Minai, A.A., co-editors)

- Journal of Integrative Neuroscience, Vol. 2, No. 1, pp. 1-146, 2003.
Complex Nonlinear Neural Dynamics: Experimental Advances and Theoretical Interpretations (Andras, P., Kozma, R., Erdi., P., co-editors)
- Information Sciences, Vol. 123, No. 1-2, pp. 1-159, 2000.
Methods and systems for intelligent human-computer interaction (N. Kasabov, R. Kozma, co-editors)
- International Journal of Intelligent Systems, Vol.13, No.6, pp.453-586, 1998.
Hybrid intelligent adaptive systems (N. Kasabov, R. Kozma, co-editors)

Reviewer:

- Acta Biotheoretica (Kluwer)
- Autonomous Robots (Springer)
- BBS Associate, Behavioral & Brain Sciences (Cambridge University Press)
- Chaos – An Int. Journal (Inst. of Physics IOP)
- Chemical Engineering & Processing (Elsevier)
- Fuzzy Sets and Systems (North Holland)
- IEEE Computational Intelligence Magazine
- IEEE Transactions on Systems, Man, and Cybernetics
- IEEE Transactions on Evolutionary Computing
- IEEE Transactions on Knowledge Discovery & Engineering
- IEEE Signals Journal
- Int. J. Bifurcation and Chaos (World Scientific)
- Int. J. Intelligent Systems (Wiley)
- Int. J. Multiphase Flow (Pergamon Press)
- Information Science (Elsevier)
- Journal of Advanced Computational Intelligence (Japan)
- J. of Integrative Neuroscience (World Scientific)
- J. of Theoretical Biology (Elsevier)
- Neural Networks (Journal of INNS, Elsevier)
- Neural Information Processing – Reviews (KAIST, Korea)
- Neural processing letters (Springer)
- Physica A (Elsevier)
- Physica D (Elsevier)
- Physics Letters A (Elsevier)
- Robotics and Autonomous Systems (Elsevier)

List of Publications

Books and Edited Volumes:

1. “*Neurodynamics of Higher-Level Cognition and Consciousness,*” L. Perlovsky, **R. Kozma**, (Eds), in Springer Series: *Understanding Complexity*, Springer Verlag, Heidelberg, Germany, ISBN 978-3-540-73266-2 (2007).
2. “*Real-Life Large-Scale Random Networks,*” B. Bollobas, **R. Kozma**, G. Tusnady, D. Miklos (Eds) *Bolyai-Springer Series on Advanced Combinatorics*, Springer Verlag, New York (2008, in preparation).
3. “Neuro-Fuzzy Techniques for Intelligent Information Processing,” Kasabov, N., **Kozma R.**, (Eds) in Series: *Studies in Fuzziness and Soft Computing*, 480 p., ISBN-3-7908-1187-4, Springer Verlag, Heidelberg (1999).
4. “*Progress in Connectionist-based Information Systems,*” Kasabov, N., **Kozma, R.**, Ko, K., O’Shea, R., Coghill, G., Gedeon, T., (Eds) Vol. 1-2, pp.1355, Springer Verlag (1997).

5. "Noise Investigations on Boiling Effects in a Simulated MTR-Type Fuel Assembly," **Kozma, R.**, Delft University Press, ISBN-90-73861-04-7 (1992).

Journal Articles

1. R. Ilin, **R. Kozma**, and P. J. Werbos (2008) "Beyond Backpropagation and Feedforward Models: a Practical Training Tool for a More Efficient Universal Approximator", *IEEE Trans. Neur. Netw.*, 19(3), June 2008 (in press).
2. **Kozma, R.** (2007) "Intentional systems: Review of neurodynamics, modeling, and robotics implementations," *Physics of Life Reviews*, Vo. 4, No. 4, December 2007 (in press).
3. Beliaev, I., **Kozma, R.** (2007) "Time series prediction using chaotic neural networks: Case study of CATS Benchmark test," *Neurocomputing*, 70(13), pp. 2426-2439.
4. **Kozma, R.**, Harter, D., Achunala, S. (2007) "Dynamical Aspects of Behavior Generation Under Constraints," *J. Cognitive Neurodynamics*, 1(3), 213-223.
5. **Kozma, R.**, H. Aghazarian, T. Huntsberger, E. Tunstel, W.J. Freeman (2007) "Computational Aspects of Cognition and Consciousness in Intelligent Devices," *IEEE Comp. Int. Mag.*, 2(3), pp. 53-64.
6. **Kozma, R.**, Fukuda, T. (2006) Intentional Dynamic Systems: Fundamental Concepts and Robotics Applications, *Int. J. Intelligent Systems*, 21, 875-879.
7. Harter, D., **Kozma, R.**, (2006) "Aperiodic Dynamics and the Self-Organization of Cognitive Maps in Autonomous Agents," *Int. J. Intelligent Systems*, 21(9), 955-972.
8. Ilin, R., **Kozma, R.** (2006) "Stability of coupled excitatory-inhibitory neural populations & application to control multistable systems," *Phys. Lett. A*, 360, 66-83.
9. Balister, P, Bollobas, B, **Kozma, R.** (2006) "Mean field models of probabilistic cellular automata", *Random Structures and Algorithms*, 29, 399-415.
10. **Kozma, R.**, Puljic, M., Bollobas, B., Balister, P., Freeman, W.J. (2005) "Phase Transitions in the Neuropercolation Model of Neural Populations with Mixed Local and Non-Local Interactions," *Biol. Cybernetics*, 92(6), 367-379.
11. Harter, D., **Kozma, R.** (2005) "Chaotic Neurodynamics for Autonomous Agents," *IEEE Trans. Neural Networks*, 16(4), pp. 565-579.
12. Puljic, M., **Kozma, R.** (2005) "Activation Clustering in Neural and Social Networks," *Complexity*, 10(4), 42-50.
13. **Kozma, R.**, Wong, D., Demirer, M., Freeman, W.J. (2005) "Learning intentional behavior in the K-model of the amygdala and entorhinal cortex with the cortico-hippocampal formation," *Neurocomputing*, 65-66, pp. 23-30.
14. **R. Kozma**, M. Puljic, P. Balister, B. Bollobas, W.J. Freeman, (2004) "Neuropercolation: A Random Cellular Automata Approach to Spatio-Temporal Neurodynamics," *Lecture Notes in Computer Science*, vol. 3305, pp. 435-443.
15. Wang, D.L., Freeman, W.J., **Kozma, R.**, Lozowski, A.G., Minai, A.A. (2004) "Guest Editorial – Special Issue on Temporal Coding for Neural Information Processing," *IEEE Trans. Neur. Netw.*, 15(5), pp. 953-956.

16. **Kozma, R.**, Wong, D., Freeman, W.J., Erdi, P. (2004) "Learning environmental clues in the KIV model of the cortico-hippocampal formation," *Neurocomputing*, 58-60, 721-728.
17. Voicu, H., **Kozma, R.**, Wong, D., Freeman, W.J. (2004) "Spatial navigation model based on chaotic attractor networks," *Connection Science*, 16(1), pp. 1-19.
18. **Kozma, R.**, (2003) On the Constructive Role of Noise in Stabilizing Itinerant Trajectories on Chaotic Dynamical Systems, *Chaos*, Special Issue on Chaotic Itinerancy, 11(3), pp. 1078-1090.
19. Andras, P., **Kozma, R.**, Erdi, P. (2003) "Complex Nonlinear Neural Dynamics: Experimental Advances and Theoretical Interpretations," *Journal of Integrative Neuroscience*, 2(1), pp. 1-3.
20. **Kozma, R.**, Freeman, W.J. (2003) Basic Principles of the KIV Model and its application to the Navigation Problem, *Journal of Integrative Neuroscience*, 2(1), pp. 125-146.
21. **Kozma, R.**, Freeman, W.J., Erdi, P. (2003) The KIV Model – Nonlinear Spatio-temporal Dynamics of the Primordial Vertebrate Forebrain, *Neurocomputing*, 52-54, pp. 819-826.
22. P.K. Roy, **Kozma, R.**, Majumdar, D.D. (2002) "From Neurocomputation to Immunocomputation: A Model and Algorithm for Fluctuation-Induced Phase Transition in Biological Systems," *IEEE Transactions in Evolutionary Computation*, 6(3): 292-305.
23. **Kozma, R.**, Freeman, W.J. (2002) Classification of EEG Patterns Using Nonlinear Neurodynamics and Chaos, *Neurocomputing*, 44-46, pp. 1107-1112.
24. Roy, P.K., **Kozma, R.** (2002) "A neurocomputational approach to neuro-oncology: programmed multimodal therapy and neuroimaging brain tumors," *Int. J. of Cancer*, 91-91, Suppl. 13.
25. **Kozma, R.**, Freeman, W.J. (2001). "Chaotic Resonance - Methods and Applications for Robust Classification of Noisy and Variable Patterns," *Int. J. Bifurcation & Chaos*, Vol. 11, No. 6, pp. 1607-1629.
26. **Kozma, R.**, M. Alvarado, L.J. Rogers, B. Lau, W.J., Freeman (2001) "Emergence of un-correlated common-mode oscillations in the sensory cortex," *Neurocomputing*, 38-40, pp. 747-755.
27. Freeman, W.J., **Kozma, R.**, Werbos, P.J. (2001) "Biocomplexity - Adaptive behavior in complex stochastic systems," *BioSystems*, 59, pp. 109-123.
28. **Kozma, R.** (2001) "Fragmented attractor boundaries in the KIII model of sensory information processing — Evidence of Cantor encoding in cognitive processes," *Behavioral and Brain Sciences*, 24(5): 820-821.
29. Freeman, W.J. and **Kozma, R.** (2000) "Local-global interactions and the role of mesoscopic (intermediate-range) elements in brain dynamics," *Behavioral and Brain Sciences*, 23(3): 401.
30. Kasabov, N., J.S. Kim, **R. Kozma**, T. Cohen (2001) "Rule extraction from fuzzy neural networks FuNN: method and real world applications," *J. Adv. Comp. Intelligence & Intelligent Informatics*, 5(4), 193-200.
31. Kasabov, N. and **Kozma, R.** (2000) "Methods and systems for intelligent human-computer interaction," Special Issue in: *Information Sciences*, 123(1-2), pp. 1-2.
32. **Kozma, R.**, Kasabov, N.K.; Kim, J.S.; Cohen, A. (1998) "Integration of connectionist methods and chaotic time-series analysis for the prediction of process data," *International Journal of Intelligent Systems*, 13(6), pp.519-38.
33. Kasabov, N.; **Kozma, R.** (1998) "Hybrid intelligent adaptive systems: a framework and a case study on speech recognition," *International Journal of Intelligent Systems*, vol.13, (no.6), p.455-66.

34. Kasabov, N., Kim, J., **Kozma, R.**, (1998) "A fuzzy neural network for knowledge acquisition in complex time series," *Control & Cybernetics*, vol. 27(4), 593-611.
35. Kasabov, N., **Kozma, R.**, Watts, M. (1998) "Phoneme-based speech recognition via fuzzy neural networks modeling and learning," *Information Sciences* (110) 1-2, pp.61-79.
36. Kasabov, N., **Kozma, R.** (1998) "Introduction: Hybrid Intelligent Adaptive Systems," *International Journal of Intelligent Systems*, vol.13, (no.6), pp.453-454.
37. Kasabov, N., **Kozma, R.** (1998) "Self-Organization and Adaptation in Intelligent Systems," *J. Adv. Comp. Intelligence*, 2(6), pp. 177-178.
38. **Kozma, R.** (1998) "Intermediate-range coupling generates low-dimensional attractors deeply in the chaotic region of one-dimensional lattices," *Physics Letters A*, vol.244, (1-3), p.85-91.
39. **R. Kozma**, M. Kitamura, J.E. Hoogenboom (1997) Void Fraction Measurements in Nuclear Reactors via Neutron Noise Methods, *Nucl. Technol.*, Vol. 118, 242-253.
40. **Kozma, R.** (1996) "Multi-Level Knowledge Representation in Neural Networks with Adaptive Structure," *Int.J. Syst. Res. Inf. Sci.*, Vol.7., pp. 1-21.
41. **R. Kozma**, M. Sakuma, Y. Yokoyama, M. Kitamura (1996) "On the Accuracy of Mapping by Neural Networks Trained by Backpropagation with Forgetting," *Neurocomputing*, Vol. 13, No. 2-4, pp. 295-311.
42. **Kozma, R.**, A. Malinowski, M. Kitamura, J.M. Zurada (1996) "On Performance Measures of Artificial Neural Networks Trained by Structural Learning Algorithm," *Austral. J. Intell. Information Proc. Systems*, Vol.3, No. 2, pp. 10-15.
43. H. Konno, **R. Kozma**, M. Kitamura (1996) CML Approach to Power Reactor Dynamics I. Preservation of Normality, *Annals of Nuclear Energy*, Vol. 22, 119-131.
44. **R. Kozma**, H. Kok, M. Sakuma, D.D. Djainal, M. Kitamura (1996) "Characterization of Two- Phase Flows using Fractal Techniques," *Int. J. Multiphase Flow*, Vol. 22, 953-968.
45. M. Sakuma, **R. Kozma**, M. Kitamura (1996) Characterization of Anomalies by Applying Methods of Fractal Analysis, *Nucl. Technol.*, Vol. 113, No. 1, 86-99.
46. **R. Kozma**, M. Sakuma, S. Sato, M. Kitamura (1995) "Adaptive Neuro-Fuzzy Signal Processing System Using Structural Learning with Forgetting," *Intelligent Automation and Soft Computing*, Vol. 1. , No. 4, 389-404.
47. **R. Kozma**, S. Sato, M. Sakuma, M. Kitamura, T. Sugiyama (1995) "Generalization of Knowledge Acquired by a Reactor Core Monitoring System Based on a Neuro-Fuzzy Algorithm," *Progress Nucl. Energy*, Vol. 29, Nos. 3-4, 203-214.
48. **R. Kozma** (1995) "Studies on the Relationship between the Statistics of Void Fraction Fluctuations and Parameters of Two-Phase Flows," *Int. J. Multiphase Flow*, Vol. 21, No. 2. 241-251.
49. **R. Kozma**, K. Nabeshima (1995) Studies on the Detection of Incipient Coolant Boiling in Nuclear Reactors using Artificial Neural Networks, *Annals Nucl. Energy*, Vol. 22, No.7 483-496.
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