

Leonid I. Perlovsky.
List of Publications in English (since 1980)

Books

Perlovsky, L.I. (2001). *Neural Networks and Intellect: using model-based concepts*. Oxford University Press, New York, NY (3rd printing).

Mayorga, R., Perlovsky, L.I., Eds. (2007). *Sapient Systems*. Springer, London, UK.

Perlovsky, L.I., Kozma, R., Eds. (2007). *Neurodynamics of Higher-Level Cognition and Consciousness*. ISBN 978-3-540-73266-2, Springer-Verlag, Heidelberg, Germany.

Perlovsky, L.I. (2008). *The Knowledge Instinct*. Basic Books.

Book Chapters

Perlovsky, L.I. (1998). *Cramer-Rao Bound for Tracking in Clutter*. Chapter in Probabilistic Multi-Hypothesis Tracking, Ed. R.L. Streit, NUWC Press, Newport, RI, pp.77-84

Perlovsky, L.I., Webb, V.H., Bradley, S.A., Hansen, C.A (1998). *Improved ROTH Detection and Tracking using MLANS*. Chapter in Probabilistic Multi-Hypothesis Tracking, Ed. R.L. Streit, NUWC Press, Newport, RI, pp.245-254.

Perlovsky, L.I. (2005). *Evolving Agents: Communication and Cognition*. Chapter in Autonomous Intelligent Systems: Agents and Data Mining. Eds: V. Gorodetsky, J. Liu, V.A. Skormin. Springer-Verlag GmbH, pp.37-49

Perlovsky, L.I. (2006). *Modeling Field Theory of Higher Cognitive Functions*. Chapter in Artificial Cognition Systems, Eds. A. Loula, R. Gudwin, J. Queiroz. Idea Group, Hershey, PA, pp.64-105.

Perlovsky, L.I. (2006). *Neural Networks, Fuzzy Models and Dynamic Logic*. Chapter in Aspects of Automatic Text Analysis (Festschrift in Honor of Burghard Rieger), Eds. R. Köhler and A. Mehler, Springer, Germany, pp.363-386.

Perlovsky, L.I. (2006). *Symbols: Integrated Cognition and Language*. Chapter in Semiotics and Intelligent Systems Development. Eds. R. Gudwin, J. Queiroz. Idea Group, Hershey, PA, pp.121-151.

Perlovsky, L.I. (2007). *Sapience, Consciousness, and the Knowledge Instinct. (Prolegomena to a Physical Theory)*. Chapter in Sapient Systems, Eds. Mayorga, R., Perlovsky, L.I., Springer, London.

Perlovsky, L.I. and Mayorga, R. (2007). *Preface*. Chapter in *Sapient Systems*, Eds. Mayorga, R., Perlovsky, L.I., Springer, London.

Perlovsky, L., Kozma, R. (2007). *Editorial - Neurodynamics of Cognition and Consciousness*, Chapter in *Neurodynamics of Cognition and Consciousness*, Perlovsky, L., Kozma, R. (eds), ISBN 978-3-540-73266-2, Springer Verlag, Heidelberg, Germany.

Perlovsky, L.I. (2007). *Neural Dynamic Logic of Consciousness: the Knowledge Instinct*. Chapter in *Neurodynamics of Higher-Level Cognition and Consciousness*, Eds. Perlovsky, L.I., Kozma, R. ISBN 978-3-540-73266-2, Springer Verlag, Heidelberg, Germany.

Tutorials, Invited Lectures, Editorials (since 2003)

Perlovsky, L.I. (2007). *Bio-inspired and Cognitive Computing for data mining, tracking, fusion, financial prediction, language understanding, web search engines, and diagnostic modeling of cultures*. IEEE fall course, Central New England Council.

Perlovsky, L.I. (2007). *Neural Modeling Fields: engineering of cognition, language, consciousness, and evolution*. Gabor Invited Lecture, International Joint Conf. on Neural Networks, Orlando, FL.

Perlovsky, L.I. (2007). *Toward Physics of the Mind: Concepts, Emotions, Consciousness, and Symbols*. Karolinska Institutet, Stockholm, Sweden.

Perlovsky, L.I. (2007). *Cognitive neural networks for recognition, data mining, tracking, fusion, prediction, and language understanding*. Tutorial lecture at International IEEE and INNS Joint Conference on Neural Networks (IJCNN'07). Orlando, FL.

Perlovsky, L.I. (2007). *Evolution of the Mind, Language, and Cultures*. Seminar, Institute for Information Transmission Russian Academy of Sciences, Moscow.

Perlovsky, L.I. (2007). *Consciousness and Music*. St. Petersburg University for Philosophy and Religion, Invited Lecture, St. Petersburg, Russia.

Perlovsky, L.I. (2007). *Cognitive Algorithms: Engineering, Dynamic Logic, Neural Fields, and the Mind*. Invited Plenary Lecture, SPIE Defense and Security Conference, Orlando, FL

Perlovsky, L.I. (2007). *Cognitive Algorithms for Tracking*. Invited Lecture, Arizona State University, Tempe, AZ.

Perlovsky, L.I. (2007). *Physics of the Mind: Inverse Scattering, Higher Cognitive Functions, and Engineering Applications*. Invited Lecture, University of Arizona, Tucson, AZ.

Perlovsky, L.I. (2007). *Concurrent learning and fusion*. Guest Editorial. *Information Fusion*, **8**, pp.224-226.

Perlovsky, L.I. (2006). *Bio-inspired and Cognitive Algorithms - For Recognition, Data Mining, Tracking, Fusion, Prediction, And Language Understanding*. IEEE fall course, Central New England Council.

Perlovsky, L.I. (2006). *Computations in the Mind*. Plenary lecture at the International Association of Science and Technology Development Conference on Computational Intelligence. San Francisco, CA.

Perlovsky, L.I. (2006). *Biologically Inspired Methods For Array Signal Processing*. Plenary Distinguished Lecturer at Fourth IEEE Workshop on Sensor Array and Multichannel Processing (SAM 06), Waltham, MA.

Perlovsky, L.I. (2006). *Co-evolution of Consciousness, Cognition, Language, and Music*. Tutorial lecture course at Biannual Cognitive Science Conference, St. Petersburg, Russia.

Perlovsky, L.I. (2006). *Integration of Cognition and Language*. St. Petersburg Inst. Informatics & Automation, Russian Academy of Sciences.

Perlovsky, L.I. (2006). *Co-Evolution of Cognition and Music*. Art Theory Inst., Russian Academy of Sciences, Moscow.

Perlovsky, L.I. (2006). *Co-evolution of Cognition and Language*. Systems Analysis Inst., Russian Academy of Sciences. Moscow.

Perlovsky, L.I. (2006). *Neural Network Mechanisms for Cognition and Language*. The Official Seminar, Russian Neural Networks Society.

Perlovsky, L.I. (2006). *Joint Evolution of Cognition, Consciousness, and Music*. Lectures in Musicology, School of Music, University of Ohio, Columbus.

Perlovsky, L.I. (2006). *Non-linear Evolutionary Dynamics of Cognition, Emotions, Consciousness, and Music*. Santa Fe Institute. Santa Fe, NM.

Perlovsky, L.I. (2006). *Computational Intelligence and Higher Cognitive Functions*. Daniel D. McCracken Computational Sciences Seminar Series, Central Washington University.

Perlovsky, L.I. (2005). *Computational Intelligence: Natural Information Processing*. IEEE XELL Project (Multi media corporate tutorial series).

Perlovsky, L.I. (2005). *Bio-inspired and Cognitive Algorithms - For Recognition, Data Mining, Tracking, Fusion, Prediction, And Language Understanding*. IEEE fall course, Central New England Council.

Perlovsky, L.I. (2005). *Computational Intelligence. Role of Conceptual and Emotional Processing in Perception and Cognition*. Invited Lecture, University of Arizona, Tempe, AZ.

Perlovsky, L.I. (2005). *Biologically-Inspired Cognitive Architectures*. Tutorial Lecture at IEEE Int. Conf. On Integration of Knowledge Intensive Multi-Agent Sys., Waltham, MA.

Perlovsky, L.I. (2005). *Bio-Inspired High Level Sensor Fusion: Sensing and Communication*. Keynote Plenary Lecture at IEEE Int. Conf. On Integration of Knowledge Intensive Multi-Agent Sys., Waltham, MA.

Perlovsky, L.I. (2005). *Bio-Inspired Integration Of Sensing And Communication*. Defense Applications of Signal Processing Workshop. Invited Lecture, Midway, Utah, 27 March – 1 April, 2005.

Perlovsky, L.I. (2005). *Integrating Language and Cognition*. Tutorial lecture at International IEEE and INNS Joint Conference on Neural Networks (IJCNN'05). Montreal, Quebec, Canada.

Perlovsky, L.I. (2004). *Emotions and Concepts in Cognition and Language*. Invited Lecture, University of Edinburgh, Edinburgh, UK

Perlovsky, L.I. (2004). *Integration of Information in Human Brain. Current Ideas in Computational Intelligence*. IEEE fall course, Central New England Council.

Perlovsky, L.I. (2004). *Integrating Language and Cognition*. Tutorial Lecture at IEEE Joint Robotic and Automation and Computational Intelligence Chapter Meeting.

Perlovsky, L.I. (2004). *Computational Intelligence: Integrating Language and Cognition*. Invited Lecture at Mitsubishi Electronic Research Laboratory, Cambridge, MA.

Perlovsky, L.I. (2004). *The Mind: Language and Cognition*. Invited Lecture, University of Arkansas, Fayetteville, AR.

Perlovsky, L.I. (2003). *Structures Of The Mind: Concepts, Emotions, Instincts, Conscious And Unconscious*. Tutorial, Int. Conf. On Integration of Knowledge Intensive Multi-Agent Systems, Cambridge, MA Oct.1-3, 2003.

Perlovsky, L.I. (2003). *The Mind: Structure and Evolution*. Series of Lectures, Novosibirsk University, October, 2003.

Perlovsky, L.I. (2003). *Mathematics of Intelligence and Emotions*. Invited Plenary Talk, 7th JCIS, Cary, NC, USA Sept. 26-31, 2003.

Perlovsky, L.I. (2003). *Integration of Sensory and Language Data*. Plenary Keynote Lecture, The 2003 International Conference on Information Systems and Engineering (ISE 2003), Montreal, Quebec, Canada, July 20 - 25, 2003.

Perlovsky, L.I. (2003). *Integration of Language and Cognition at Pre-Conceptual Level*. Keynote Plenary Lecture, Int. Conf. On Integration of Knowledge Intensive Multi-Agent Systems, Cambridge, MA Oct.1-3, 2003.

Refereed Papers in Journals and Scientific Collections

- Perlovsky, L.I. (1986). *Scattering of Seismic Waves by Shear Modulus Fluctuations Due to Rigid-Nonrigid Phase Transition*. Bollettino de Giofisica Teorica ed Applicata, **XXVIII** (109), pp. 3-13.
- Perlovsky, L.I. (1988a). *Cramer-Rao Bounds for the Estimation of Means in a Clustering Problem*. Pattern Recognition Letters **8**, 1-3.
- Perlovsky, L.I. (1988b). *Frequency Estimates for Simple Oscillating Systems Under Random Forcing*. In Linear Algebra in Signals, Systems and Control, ed. B.N. Datta et al, SIAM.
- Perlovsky, L.I. (1989b). *Cramer-Rao Bounds for the Estimation of Normal Mixtures*. Pattern Recognition Letters, **10**, 141-148.
- Perlovsky, L.I. & Vinkovetsky, Y.A. (1989). *The Role of Pressure in the Generation and Preservation of Hydrocarbons*. Bollettino di Geofisica Teorica ed Applicata, **XXXI** (122), pp. 87-90.
- Perlovsky, L.I. (1991). *Acoustic Critical Opalescence of the Transitional Under-Ice Layer in the Arctic*. Bollettino di Geofisica Teorica ed Applicata, **XXXIII** (132), pp. 237-256.
- Perlovsky, L.I. & McManus, M.M. (1991). *Maximum Likelihood Neural Networks for Sensor Fusion and Adaptive Classification*. Neural Networks **4** (1), pp. 89-102.
- Clark, L.G., Perlovsky, L.I., Schoendorf, W.H., Plum, C.P. and Keller, T.L. (1992). *Evaluation of Forward-Looking Infrared Sensors for Automatic Target Recognition Using an Information-Theoretic Approach*. Optical Engineering, **31** (12), pp. 2618-2627.
- Perlovsky, L.I. & Marzetta, T.L. (1992). *Estimating a Covariance Matrix from Incomplete Independent Realizations of a Random Vector*. IEEE Trans. on SP, **40** (8), pp. 2097-2100.
- Perlovsky, L.I. (1994a). *Computational Concepts in Classification: Neural Networks, Statistical Pattern Recognition, and Model Based Vision*. Journal of Mathematical Imaging and Vision, **4** (1), pp. 81-110.
- Perlovsky, L.I. (1994b). *A Model Based Neural Network for Transient Signal Processing*, Neural Networks, **7**(3), pp. 565-572.
- Perlovsky, L.I., Coons, R. P., Streit, R.L., Luginbuhl, T.E., Greineder, S. (1994). *Application of MLANS to Signal Classification*. Journal of Underwater Acoustics, **44** (2), pp.783-809.
- Perlovsky, L.I. & Jaskolski, J.V. (1994). *Maximum Likelihood Adaptive Neural Controller*. Neural Networks, **7** (4), pp. 671-680.
- Perlovsky, L.I., Chernick, J.A. & Schoendorf, W.H. (1995). *Multi-Sensor ATR and Identification Friend or Foe Using MLANS*. Neural Networks, **8** (7/8), pp.1185-1200.

- Garvin, L. & Perlovsky, L.I. (1995). Statistical Quantum Theory and Statistical Pattern Recognition. *Current Topics in Pattern Recognition Research*. Ed. Pandalai. Research Trends, Trivandrum, India.
- Perlovsky, L.I., Schoendorf, W.H., Tye, D.M., Chang, W. (1995). *Concurrent Classification and Tracking Using Maximum Likelihood Adaptive Neural System*. Journal of Underwater Acoustics, **45**(2), pp.399-414.
- Perlovsky, L.I. (1997). *Cramer-Rao Bound for Tracking in Clutter and Tracking Multiple Objects*. Pattern Recognition Letters, **18**(3), pp.283-288.
- Perlovsky, L.I. (1997). *Physical Concepts of Intellect*. Proceedings of Russian Academy of Sciences, **354**(3), pp. 320-323.
- Perlovsky, L.I., Plum, C.P., Franchi, P.R., Tichovolsky, E.J., Choi, D.S., & Weijers, B. (1997). Einsteinian Neural Network for Spectrum Estimation. *Neural Networks*, **10**(9), pp.1541-46.
- Perlovsky, L.I., Schoendorf, W.H., Garvin, L.C., Chang. (1997). *Development of Concurrent Classification and Tracking for Active Sonar*. Journal of Underwater Acoustics, **47**(2), pp.375-388.
- Perlovsky, L.I. (1998). *Conundrum of Combinatorial Complexity*. IEEE Trans. PAMI, **20**(6) pp. 666-670.
- Perlovsky, L.I., Webb, V.H., Bradley, S.R. & Hansen, C.A. (1998). *Improved ROTH Detection and Tracking Using MLANS*. AGU Radio Science, **33**(4), pp.1034-44.
- Perlovsky, L.I. (2002). *Physical Theory of Information Processing in the Mind: concepts and emotions*. SEED On Line Journal, 2002 **2**(2), pp. 36-54,.
- Perlovsky, L.I. (2002). *Statistical Limitations on Molecular Evolution*. Journal of Biomolecular Structure & Dynamics, **19**(6), pp.1031-43.
- Perlovsky, L.I. (2004). *Integrating Language and Cognition*. IEEE Connections, Feature Article, **2**(2), pp. 8-12.
- Fontanari, J.F. and Perlovsky, L.I. (2004). *Solvable null model for the distribution of word frequencies*. Physical Review **E 70**, 042901 (2004).
- Deming, R., Perlovsky, L.I. (2005). *A Mathematical Theory for Learning, and its Application to Time-varying Computed Tomography*. New Math. and Natural Computation. **1**(1), pp.147-171.
- Perlovsky, L.I. (2006). *Toward Physics of the Mind: Concepts, Emotions, Consciousness, and Symbols*. Phys. Life Rev. **3**(1), pp.22-55.
- Perlovsky, L.I. (2006). *Fuzzy Dynamic Logic*. New Math. and Natural Computation, **2**(1), pp.43-55.

Perlovsky, L.I. (2007). *The Mind vs. Logic: Aristotle and Zadeh*. Critical Review, **1**(1), in print.

Deming, R.W. and Perlovsky, L.I. (2007). Concurrent multi-target localization, data association, and navigation for a swarm of flying sensors, *Information Fusion*, **8**, pp.316-330.

Perlovsky, L.I. and Deming, R.W. (2007). *Neural Networks for Improved Tracking*, IEEE Trans. Neural Networks, **18**(6), pp. 1854-1857.

Perlovsky, L.I. (2007). *Fusion of Sensor and Language Signals at Pre-Conceptual Level*, Information Sciences, **177**, pp. 2099-2118.

Fontanari, J.F. and Perlovsky, L.I. (2007). Evolving Compositionality in Evolutionary Language Games. *IEEE Transactions on Evolutionary Computations.*, **11**(6), pp. 758-769; on-line doi:10.1109/TEVC.2007.892763

Robert Linnehan, David Brady, John Schindler, Leonid Perlovsky, Muralidhar Rangaswamy. (2007). On the Design of SAR Apertures Using the Cram ´er-Rao Bound. *IEEE Transactions on Aerospace and Electronic Systems*, **43**(1), pp. 344-355.

Perlovsky, L.I. (2007). *Evolution of Languages, Consciousness, and Cultures*. IEEE Computational Intelligence Magazine, **2**(3), pp.25-39

Deming R., Schindler J., Perlovsky L. (2007). *Multitarget/Multisensor Tracking using only Range and Doppler Measurements*, submitted to IEEE Transactions on Aerospace and Electronic Systems.

Levine, D.S., Perlovsky, L.I. (2007). *Simplifying Heuristics versus Careful Thinking: Scientific Analysis of Millennial Spiritual Issues*. Zygon, Journal of Science and Religion, in print.

Fontanari, J.F. and Perlovsky, L.I. (2007). How language can help discrimination in the Neural Modeling Fields framework. *Neural Networks*, in print

Fontanari, J.F. and Perlovsky, L.I. (2007). *Inverse density dependence in the evolution of communication*, submitted.

Papers and Conference Presentations

Perlovsky, L.I. (1980). *On Estimates of the Parameters of the Autoregressive Process: Spectrum vs. Autocorrelation Function*. American Statistical Association Annual Meeting, Houston, Texas.

Perlovsky, L.I. and Van Gelder, P. (1980). *The Biological Clock Hypothesis and Eye Movements*. Society for Mathematical Psychology Annual Meeting, Madison, Wisconsin.

- Perlovsky, L.I. (1982a). *Full Waveform Sonic Log Processing*. Exxon Research Memo, Houston, Texas.
- Perlovsky, L.I. (1982b). *Lithology Identification from Sonic Waveform Log Data*. Exxon Research Report, Houston, Texas.
- Perlovsky, L.I. (1984). *Fracture Identification from Sonic Waveform Log Data*, Exxon Research Report, Houston, Texas.
- Perlovsky, L.I. (1985). *Critical Opalescence of Seismic Waves*. Distinguished Lecturer's Seminar, Columbia University, New York.
- Perlovsky, L.I. (1986b). *Efficient Estimators for Autoregressive Parameters*. SIAM meeting on Linear Systems, Boston, MA.
- Perlovsky, L.I. (1986c). *Akaike Information Criterion for Estimating the Number of Clusters*. Unpublished.
- Perlovsky, L.I. (1987a). *Antisimulation for Penetration Aids*. Final Report for Period 16 July 1986 - 15 January 1987, Phase I SBIR, for HQ, Ballistic Missile Office.
- Perlovsky, L.I. (1987b). *Multiple Sensor Fusion and Neural Networks*. DARPA Neural Network Study, MIT/Lincoln Laboratory, Lexington, MA.
- Perlovsky, L.I. (1987c). *Robust Estimates for Parameters of Oscillating Systems*. SIAM 35th Anniversary Meeting, Denver, CO.
- Perlovsky, L.I. (1987d). *Pitfalls of Yule-Walker Equations*. SIAM 35th Anniversary Meeting, Denver, CO.
- Perlovsky, L.I. (1988a). *Neural Networks for Pattern Recognition and Cramer-Rao Bounds*. Boston University Engineering Seminar, Boston, MA.
- Perlovsky, L.I. (1988b). *Neural Networks for Sensor Fusion and Adaptive Classification*. First Annual International Neural Network Society Meeting, Boston, MA.
- Perlovsky, L.I. (1988e). *Field Theoretical Model of Acoustic Propagation with Rough Boundaries*. Report # NRC-TR-88-103, prepared for the Navy under contract No. N66001-88-C-0150.
- Perlovsky, L.I. (1989a). *Antisimulation for Penetration Aids*. Technical Report for Period of 16 May 1988 - 15 May 1989, Phase II SBIR, for HQ, Ballistic Systems Division.
- Perlovsky, L.I. (1989c). *Neural Network for Adaptive Processing of Quantum Limited Images*. Optical Society of America Topical Meeting on Quantum Limited Image and Information Processing II, North Falmouth, MA.

- Perlovsky, L.I. (1989d). *Neural Networks with Maximal Adaptive Efficiency*. Proceedings of the 1989 IEEE International Conference on Systems, Man, and Cybernetics, Cambridge, MA.
- Garvin, L., Marzetta, T. and Perlovsky, L. (1989). *Fusion and Effects of Fusion on Exoatmospheric Discrimination (U)*, Proceedings of 1989 Tri-Service Data Fusion Symposium.
- Perlovsky, L.I. & Marzetta, T.L. (1989). *Estimating a Covariance Matrix in a Sensor Fusion Problem*. Proceedings of Second Biennial Acoustics, Speech, and Signal Processing Mini Conference, IEEE Central New England Council.
- Perlovsky, L.I. & McManus, M.M. (1989). *Maximum Likelihood Neural Network for Adaptive Classification*. International Joint Conference on Neural Networks, Washington, DC.
- Perlovsky, L.I. (1990a). *Self-learning ATR Based on Maximum Likelihood Artificial Neural System*. Research Conference on Neural Networks for Automatic Target Recognition, Boston University, Tyngsboro, MA.
- Perlovsky, L.I. (1990b). *Development of Neural Networks for Adaptive Classification and Sensor Fusion*. Ballistic Missile Discrimination Workshop, MIT/Lincoln Laboratory, Lexington, MA.
- Perlovsky, L.I. (1990c). *Application of Neural Networks to Transient Signal Classification*. Government Neural Network Application Workshop, NOSC, San Diego, CA.
- Perlovsky, L.I. (1990d). *ATR Performance Prediction Model Development using Maximum Likelihood Artificial Neural System*. ATR System and Technology Conference, NWSC, Silver Springs, MD.
- Perlovsky, L.I. (1990e). *Efficient Neural Network for Transient Signal Classification*. 24th Annual Asilomar Conference on Signals, Systems, and Computers, Pacific Grove, CA.
- Perlovsky, L.I. (1990f). *Target Identification Using Maximum Likelihood Artificial Neural System*. Proceedings of the 1990 US DoD Joint-Service Combat Identification Systems Conference, Monterey, CA.
- Perlovsky, L.I. (1990g). *Development of Neural Networks for Sonar Signal Classification*. Proceedings of the 1990 US DoD Joint-Service Combat Identification Systems Conference, Monterey, CA.
- Perlovsky, L.I. (1991a). *Tracking Multiple Objects in Visual Imagery*. Conference on Neural Networks for Vision and Image Processing, Tyngsboro, MA.
- Perlovsky, L.I. (1991b). *Computational Concepts in ATR: Neural Networks, Statistical Pattern Recognition, and Model Based Vision*. ATR Working Group Meeting, Seattle, WA.
- Perlovsky, L. I. (1991c). *Fuzzy Tracking of Multiple Objects*. First IEEE-SP Workshop on Neural Networks for Signal Processing, Princeton, NJ.

Perlovsky, L. I. (1991d). *Neural Networks and Model Based Approaches to Object Identification*. Visual Communication and Image Processing '91. SPIE Conference, Boston, MA.

Perlovsky, L. I. (1991e). *Decision Directed Sensor Fusion*. 2nd Government Neural Network Applications Workshop, Huntsville, AL.

Perlovsky, L. I. (1991f). *Model Based Target Tracker with Fuzzy Logic*. 25th Annual Asilomar Conference on Signals, Systems and Computers, Pacific Grove, CA.

Perlovsky, L. I. (1991g). *Model Based Classification of Transient Signals*. IEEE Conference on Neural Networks for Ocean Engineering, Washington, DC.

Perlovsky, L. I. (1991h). *Application of Fuzzy Logic to Discrimination*. Discrimination Interchange Contribution, SDC, Huntsville, AL.

Burdick, B.J., and Perlovsky, L.I. (1991). *Application of MLANS to Real-Time Learning of Targets*. PSAG Meeting, Washington, D.C.

Perlovsky, L. I. & Burdick, B.J. (1991). *MLANS Adaptive Algorithm Results*. Optical Discrimination Algorithms Conference, Huntsville, AL.

Perlovsky, L.I. & Plum, C.P. (1991). *Model Based Multiple Target Tracking Using MLANS*. Proceedings of Third Biennial ASSP Mini Conference, Boston, MA.

Perlovsky, L. I. (1992a). *Fuzzy Decision Sensor Fusion*. Fourth International Conference on Strategic Software Systems, Huntsville, AL.

Perlovsky, L. I. (1992b). *Fuzzy Tracking Using MLANS*. SPIE Aerospace Sensing Symposium, Orlando, FL.

Perlovsky, L. I. (1992c). *Track before Detect Using Model Based Neural Network*. 3rd Government Neural Network Applications Workshop, Dayton, OH.

Perlovsky, L. I. (1992d). *Adaptive Discrimination Algorithm for Mitigating Dependence on Prior Knowledge*. Optical Discrimination Algorithms Meeting, Huntsville, AL.

Perlovsky, L. I. (1992e). *Unified Approach to Surveillance*. Technology Assessment Meeting, Huntsville, AL.

Perlovsky, L.I. (1992f). *Model Based Sensor Fusion*. Proceedings of SPIE Conference on Sensor Fusion, **1828**, pp. 197-200. Boston, MA.

Perlovsky, L.I. (1992g). *Combining Neural Networks with Model Based Approach to Signal Processing*. Oceans 1992 IEEE Conference. Newport, RI.

Perlovsky, L.I. (1992h). *Adaptive Discrimination for Mitigating Dependence on Prior Knowledge*. Discrimination Meeting. NRC, Huntsville, AL.

Perlovsky, L.I. (1992i). *Adaptive Discrimination Using Kill Assessment*. Discrimination Meeting. NRC, Huntsville, AL.

Perlovsky, L.I. (1992j). *Probabilistic Track Before Detect Using MLANS*. Discrimination Meeting. NRC, Huntsville, AL.

Perlovsky, L.I. (1992k). *Maximum Likelihood Adaptive Neural System Application to Nontraditional Signal Classification*. 3rd Annual Office of the Naval Technology Full Spectrum Review. Proceedings, **1**, pp. 121-146, NUWC, New London, CT.

Perlovsky, L.I. (1992i). *Model Based Neural Networks*. Invited Lecture at the Applied Mathematics Seminar. University of Massachusetts. Lowell, MA.

Perlovsky, L.I. & Garvin, L.C. (1992). *Sensing and Discriminating Schema Using MLANS*. Optical Discrimination Algorithm Conference, Huntsville, AL.

Perlovsky, L.I. & Jaskolski, J.V. (1992a). *Applications of Neural Networks to Army Problems*. Smart Munitions Working Group. Aberdeen Proving Ground, MD.

Perlovsky, L.I. & Jaskolski, J.V. (1992b). *Concurrent Adaptive Classification and Tracking*. The Office of the Naval Technology Low Frequency Active Technical Review. NRL, Washington, DC.

Perlovsky, L.I., Jaskolski, J.V. & Chernick, J. (1992). *Characterization of Clutter in IR Images Using MLANS*. 26th Asilomar Conference on Signals, Systems and Computers, Pacific Grove, CA.

Perlovsky, L.I. & Magnuson, J. (1992). *Multi-Layer Thin Films Optimized for CCD Goals*. Third Camouflage Concealment and Deception Symposium, Huntsville, AL.

Perlovsky, L.I., Schoendorf, W.H., Clark, L.G., & Keller, T.L. (1992a). *Information Theoretic Performance Model for ATR*. IRIS meeting on Passive Sensors, Laurel, MD (Secret).

Perlovsky, L.I., Schoendorf, W.H., Clark, L.G., & Keller, T.L. (1992b). *Evaluation of Second Generation FLIR Sensors Using an Information Theoretic Approach*. Second Automatic Target Recognizer System & Technology Conference, Fort Belvoir, VA (Secret).

Perlovsky, L.I., Schoendorf, W.H., Plum, C.P., Keller, T.L., & Clark, L.G. (1992c). *Evaluation of FLIR Sensors for Automatic Target Recognition*. SPIE Aerospace Sensing Symposium, Orlando, FL.

Perlovsky, L.I. (1993a). *Decision Directed Information Fusion*. Adaptation Workshop, MIT/LL, Boston, MA.

Perlovsky, L.I. (1993b). *MLANS Neural Network for Track Before Detect*. IEEE NAECON Conference. Dayton, OH.

Perlovsky, L.I. (1993c). *MLANS Neural Network for Sensor Fusion*. IEEE NAECON Conference. Dayton, OH.

Perlovsky, L.I. (1993d). *Decision Directed Information Fusion Using MLANS*. Information Fusion Workshop, George Mason University, Harpers Ferry, WV.

Perlovsky, L.I. (1993e). *Maximum Likelihood Adaptive Neural System Application to Nontraditional Signal Classification*. 4th Annual Office of the Naval Technology Full Spectrum Review. Proceedings, NUWC, New London, CT.

Perlovsky, L.I., Jaskolski, J.V. & Chernick, J. (1993). *Application of the MLANS to Non-cooperative IFF in Infrared Images*. ATR Systems and Technology Conference. Monterey, CA.

Keller, T.L., Perlovsky, L.I., Schoendorf, W.H., Clark, L.G. (1993). *Information Theoretic Approach to Sensor Evaluation*. IEEE NAECON Conference, Dayton, OH.

Perlovsky, L.I. & Magnuson, J. (1993). *Development of Disinformation Concept and Materials*. Wright Laboratory Materials Newsletter, Dayton, OH.

Perlovsky, L.I. (1994c). *MLANS Application to Sensor Fusion*. SPIE Conference on Signal Processing, Sensor Fusion and Target Recognition III, Orlando, FL.

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Chernick, J.A., Perlovsky, L.I., Tye, D.M. (1994). *Evaluation of the MLANS Applications to Non-Cooperative IFF*. SPIE Conference on Signal Processing, Sensor Fusion, and Target Recognition III, Orlando, FL.

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