References for Type-2 Fuzzy Sets
and Fuzzy Logic Systems
Prepared by
Jerry M. Mendel

Note: This list is a work in progress. If you are the author of a publications (one or more) that you feel should be added to this list, please send the listings to me formatted as below, and I will add them to the list when it is next updated. My e-mail address is: mendel@sipi.usc.edu.

Books

Castillo, O. and P. Melin, "*Type-2 Fuzzy Logic Theory and Applications*," Springer-Verlag, Berlin, 2008

Dubois, D. and H. Prade, *Fuzzy Sets and Systems: Theory and Applications*, Academic Press, NY, 1980.

Kaufman, A. and M. M. Gupta, *Introduction to Fuzzy Arithmetic: Theory and Applications*, Van Nostrand Reinhold, NY 1991.

Klir, G. J. and B. Yuan, *Fuzzy Sets and Fuzzy Logic: Theory and Applications*, Prentice Hall, Upper Saddle River, NJ, 1995.

Mendel, J. M., *Uncertain Rule-Based Fuzzy Logic Systems: Introduction and New Directions*, Prentice-Hall, Upper-Saddle River, NJ, 2001.

Articles

Agüero, J. R. and A. Vargas, "Calculating function of interval type-2 fuzzy numbers for fault current analysis," *IEEE Trans. on Fuzzy Systems*, vol. 15, pp. 31-40, February 2007.

Astudillo, L., O. Castillo, L. T. Aguilar and R. Martinez, "Hybrid control for an autonomous wheeled mobile robot under perturbed torques," in *Foundations of Fuzzy Logic and Soft Computing* (P. Melin et al, Eds.), Proc. of IFSA 2007, Cancun, Mexico, June 2007, Springer-Verlag, Berlin, Heidelberg, pp. 594-603.

Auephanwiriyakul, S., "A Linguistic K-Nearest Prototype With an Application to Management Surveys," *Proc. IEEE FUZZ Conference*, Honolulu, HI, May 2002.

Auephanwiriyakul, S., A. Adrian and J. M. Keller, "Type-2 Fuzzy Set Analysis in Management Surveys," *Proc. IEEE FUZZ Conference*, Honolulu, HI, May 2002, pp. 1321-1325.

Baklouti, N. and A. M. Alimi, "Motion Planning in Dynamic and Unknown Environment Using an Interval Type-2 TSK Fuzzy Logic Controller," *Proc. IEEE FUZZ Conference*, pp. 1848-1853, London, UK, July 2007.

Begian, M. B., W. Melek and J. M. Mendel, "Parametric design of stable type-2 TSK fuzzy systems," NAFIPS 2008, Paper # 60104, New York City, May 2008.

Begian, M., B., W. W. Melek and J. M. Mendel, "Stability Analysis of Type-2 Fuzzy Systems," *Proc. IEEE FUZZ Conference*, Paper # FS0233, Hong Kong, China, June 2008.

Bernal, H., K. Duran and M. Melgarejo, "A Comparative Study Between Two Algorithms for Computing the Generalized Centroid of an Interval Type-2 Fuzzy Set," *Proc. IEEE FUZZ Conference*, Paper # FS0234, Hong Kong, China, June 2008.

Blewitt, W. S–M. Zhou and S. Coupland, "A novel approach to type-2 fuzzy addition," *Proc. IEEE FUZZ Conference*, pp. 1456-1461, London, UK, July 2007.

Bustince, H., E. Barrenechea, M. Pagola and R. Orduna, "Construction of Interval Type-2 Fuzzy Images to Represent Images in Grayscale, False Edges," *Proc. IEEE FUZZ Conference*, pp. 73-78, London, UK, July 2007.

Bustince, H., J. Montero, E. Barrenechea and M. Pagola "Laws for Conjunctions and Disjunctions in Interval Type 2 Fuzzy Sets," *Proc. IEEE FUZZ Conference*, Paper # FS0380, Hong Kong, China, June 2008.

Cao, J., H. Liu, P. Li and D. Brown, "Adaptive Fuzzy Logic Controller for Vehicle Active Suspensions with Interval Type-2 Fuzzy Membership Functions," *Proc. IEEE FUZZ Conference*, Paper # FS0029, Hong Kong, China, June 2008.

Castillo, O. and P. Melin, "A New Hybrid Approach for Plant Monitoring and Diagnostics Combining Type-2 Fuzzy Logic and Fractal Theory," *Proc. of Int'l. Conf. NAFIPS-FLINT 2002*, pp. 111-116, New Orleans, LA, June 2002.

Castillo, O. and P. Melin, "A New Hybrid Approach for Plant Monitoring and Diagnostics Using Type-2 Fuzzy Logic and Fractal Theory," *Proc. IEEE FUZZ Conference*, pp. 102-107, St. Louis, MO, May 2003.

Castillo, O. and P. Melin, "A New Approach for Plant Monitoring Using Type-2 Fuzzy Logic and Fractal Theory," *Int'l. J. of General Systems*, vol. 33, pp. 305-319, 2004.

Castillo, O. and P. Melin, "Adaptive Noise Cancellation Using Type-2 Fuzzy Logic and Neural Networks," *Proc. IEEE FUZZ Conference*, Budapest, Hungary, July 2004.

Castillo, O., G. Huesca and F. Valdez, "Evolutionary Computing for Optimizing Type-2 Fuzzy Systems in Intelligent Control of Non-Linear Dynamic Plants," *Proc. North American Fuzzy Info. Processing Society (NAFIPS)*, pp. 247-251, Ann Arbor, MI, June, 2005.

Castro, J., O. Castillo and P. Mellin, "An interval type-2 fuzzy logic toolbox for control applications," *Proc. IEEE FUZZ Conference*, pp. 61-66, London, UK, July 2007.

Castro, J. R., O. Castillo, P. Melin and A. Rodriguez-Diaz, "A hybrid learning algorithm for interval type-2 fuzzy neural networks in time series prediction for the case of air pollution," NAFIPS 2008, Paper 61101, New York City, May 2008.

Castro, J. R., O. Castillo, P. Melin, A. Rodríguez-Díaz and L. G. Martinez "Intelligent Control Using an Interval Type-2 Fuzzy Neural Network with a Hybrid Learning Algorithm," *Proc. IEEE FUZZ Conference*, Paper # FS0224, Hong Kong, China, June 2008.

Celikyilmaz, A. and I. Burhan Turksen, "Genetic type-2 fuzzy classifier functions," NAFIPS 2008, Paper # 50026, New York City, May 2008.

Chaneau, J. L., M. Gunaratne and A. G. Altschaeffl, "An Application of Type-2 Sets to Decision Making in Engineering," in *Analysis of Fuzzy Information, vol. II: Artificial Intelligence and Decision Systems* (J. Bezdek, Ed.), CRC, Boca Raton, FL, 1987.

Chiang, D. A., L.-R. Chow and N.-C. Hsien, "Fuzzy Information in Extended Fuzzy Relational Databases," *Fuzzy Sets and Systems*, vol. 92, pp. 1-20, Nov. 1997.

Chiu, C.-H. and W.-J. Wang, "A Simple Computation of MIN and MAX Operations for Fuzzy Numbers," *Fuzzy Sets and Systems*, vol. 126, pp. 273-276, 2002.

Coupland, S. "Type-2 fuzzy sets: geometric defuzzification and type-reduction," *Proc. of IEEE Symposium on Foundations of Computational Intelligence (FOCI 2007)*, pp. 622-629, Honolulu, HI, April 2007.

Coupland, S and R. I. John, "An Approach to Type-2 Fuzzy Arithmetic," *Proc. UK Workshop on Computational Intelligence*, pp. 107-114, 2003.

Coupland, S. and R. I. John, "A New and Efficient Method for the Type-2 Meet Operation," *Proc. IEEE FUZZ Conference*, pp. 959-964, Budapest, Hungary, July 2004.

Coupland, S. and R. I. John, "Towards More Efficient Type-2 Fuzzy Logic Systems," *Proc. IEEE FUZZ Conference*, pp. 236-241, Reno, NV, May 2005.

Coupland, S. and R. I. John, "Geometric Type-1 and Type-2 Fuzzy Logic Systems," *IEEE Trans. on Fuzzy Systems*, vol. 15, pp. 3-15, February 2007.

Coupland, S. and R. I. John, "On the Accuracy of Type-2 Fuzzy Sets," *Proc. IEEE FUZZ Conference*, pp. 131-136, London, UK, July 2007.

Coupland, S. J.Wheeler and M. Gongora, "A Generalised Type-2 Fuzzy Logic System Embedded Board and Integrated Development Environment," *Proc. IEEE FUZZ Conference*, Paper # FS0126, Hong Kong, China, June 2008.

Di Lascio, L., A. Gisolfi and A. Nappi, "Medical Differential Diagnosis Through Type-2 Fuzzy Sets," *Proc. IEEE FUZZ Conference*, pp. 371-376, Reno, NV, May 2005.

Di Lascio, L. and A. Gisolfi, "A Type-2 Fuzzy Residuated Algebra," *Proc. North American Fuzzy Info. Processing Society (NAFIPS)*, pp. 525-527, Ann Arbor, MI, June, 2005.

Di Lascio, E. Fischetti, A. Gisolfi, A. Gisolfi and A. Nappi, "Type-2 Fuzzy Decision Making by Means of a BL-Algebra," *Proc. IEEE FUZZ Conference*, pp. 1502-1507, London, UK, July 2007.

Doctor, F., Hagras, H., Callaghan, V., "A Type-2 Fuzzy Embedded Agent For Ubiquitous Computing Environment," *Proceedings of the IEEE International Conference on Fuzzy Systems,* Budapest, Hungary, July 2004.

Doctor, F., Hagras, H., Callaghan, V., "A Type-2 Fuzzy Embedded Agent to Realise Ambient Intelligence in Ubiquitous Computing Environments," *Information Sciences*, vol. 171, pp. 309-334, 2005.

3

Doctor, F., H. Hagras, D. Roberts and V. Callaghan, "A Type-2 Fuzzy Based System for Handling the Uncertainties in Group Decisions for Ranking Job Applicants within Human Resources Systems," *Proc. IEEE FUZZ Conference*, Paper # FS0125, Hong Kong, China, June 2008.

Du, X. and H. Ying, "Deriving analystical structure of a type-2 fuzzy PD/PI controller," NAFIPS 2008, Paper # 50004, New York City, May 2008.

Dubois, D. and H. Prade, "Operations on Fuzzy Numbers," *Int. J. Systems Science*, vol. 9, pp. 613-626, 1978.

Dubois, D. and H. Prade, "Operations in a Fuzzy-Valued Logic," *Information and Control*, vol. 43, pp. 224-240, 1979.

Duran, K., H. Bernal and M. Melgarejo, "Improved iterative algorithm for computing the generalized centroid of an interval type-2 fuzzy set," NAFIPS 2008, Paper 50056, New York City, May 2008.

Figueroa, J., J. Posada, J. Soriano, M. Melgarejo and S. Rojas, "A Type-2 Fuzzy Controller for Tracking Mobile Objects in the Context of Robotic Soccer Games," *Proc. IEEE FUZZ Conference*, pp. 359-364, Reno, NV, May 2005.

Fisher, P., "What is Where? Type-2 Fuzzy Sets for Geographical Information," *IEEE Computational Intelligence Magazine*, vol. 2, pp. 9-14, February 2007.

Garcia, J. C. F., "Linear programming with interval type-2 fuzzy right hand side parameters," NAFIPS 2008, Paper # 61006, New York City, May 2008.

Garibaldi, J. M. and R. I. John, "Choosing Membership Functions of Linguistic Terms" *Proc. of the 2003 IEEE International Conference on Fuzzy Systems* (FUZZ-IEEE 2003), pp. 578-583, 2003.

Garibaldi, J. M., S. Musikasuwan, and T. Ozen, "The Association Between Non-Stationary and Interval Type-2 Fuzzy Sets: A Case Study," *Proc. IEEE FUZZ Conference*, pp. 224-229, Reno, NV, May 2005.

Garibaldi, J. M., M. Jaroszewski and S. Musikasuwan, "New Concepts Related to Non-Stationary Fuzzy Sets," *Proc. IEEE FUZZ Conference*, pp. 1679-1684, London, UK, July 2007.

Gorzalczany, M. B., "A Method of Inference in Approximate Reasoning Based on Interval-Valued Fuzzy Sets," *Fuzzy Sets and Systems*, vol. 21, pp. 1-17, 1987.

Greenfield, S., R. I. John and S. Coupland, "A Novel Sampling Method for Type-2 Defuzzification," *Proc. UKCI 2005*, London, September 2005.

Greenfield, S. and R. John, "Optimised Generalized Type-2 Join and Meet Operations," *Proc. IEEE FUZZ Conference*, pp. 141-146, London, UK, July 2007.

Gupta, R. K., U. Pareek and I. N. Kar, "Soft Computation of Turbine Inlet Temperature of Gas Turbine Power Plant Using Type-2 Fuzzy Logic Systems," *Proc. IEEE FUZZ Conference*, pp. 309-314, London, UK, July 2007.

Hagras, H., "A Hierarchical Type-2 Fuzzy Logic Control Architecture for Autonomous Mobile Robots", *IEEE Transactions on Fuzzy Systems*, vol. 12 No. 4, pp. 524-539, August 2004.

Hagras, H., "A Type-2 Fuzzy Logic Controller For Autonomous Mobile Robots," *Proc. IEEE FUZZ Conference,* Budapest, Hungary, July 2004.

Hagras, H., "Type-2 FLCs: a new generation of fuzzy controllers," *IEEE Computational Intelligence Magazine*, vol. 2, pp. 30-43, February 2007.

Hagras, H. "Developing a Type-2 FLC Through Embedded Type-1 FLCs," *Proc. IEEE FUZZ Conference*, Paper # FS0048, Hong Kong, China, June 2008.

Hagras, H., F. Doctor, V. Callaghan and A. Lopez, "An incremental adaptive life long learning approach for type-2 fuzzy embedded agents in ambient intelligent environments," *IEEE Trans. on Fuzzy Systems*, vol. 15, pp. 41-55, February 2007.

Herman, P., G. Prasad and T. M. McGinnity, "Support Vector-Enhanced Design of a T2FL Approach to Motor Imagery-Related EEG Pattern Recognition," *Proc. IEEE FUZZ Conference*, pp. 1933-1938, London, UK, July 2007.

Hernandez, M. de los Angeles and G.M. Mendez, "Modeling and prediction of the MXNUSD exchange rate using interval singleton type-2 fuzzy logic systems," *IEEE Computational Intelligence Magazine*, vol. 2, pp. 5-8, February 2007.

Hisdal, E., "The IF–THEN ELSE Statement and Interval-Values Fuzzy Sets of Higher Type," *Int'l. J. Man-Machine Studies*, vol. 15, pp. 385-455, 1981.

Hsiao, M., Li, T.-H. S., Lee, J.-Z., Chao, C.-H. and Tsai, S.-H., "Design of interval type-2 fuzzy sliding-mode controller," *Information Sciences*, vol. 178, pp. 1686-1716, 2008.

Huang, S.-H. and Y.-R. Chen, "VLSI implementation of type-2 fuzzy inference processor," *Proc. IEEE Int'l. Symposium on Circuits and Systems*, vol. 4, pp. 3307-3310, May 2005.

Hwang, C., Rhee, F., "An interval type-2 fuzzy spherical shells algorithm", *Proc. IEEE FUZZ Conference,* Budapest, Hungary, July 2004.

Hwang, C. and F., C.-H Rhee, "Uncertain fuzzy clustering: interval type-2 fuzzy approach to c-means," *IEEE Trans. on Fuzzy Systems*, vol. 15, pp. 107-120, February 2007.

Innocent, P.R. and R. I. John, "Type-2 Fuzzy Medical Diagnosis." *Proc. IEEE FUZZ Conference*, pp1326-1331, 2002.

Innocent, P. R., Belton, I. P., Finlay, D. B. L., and R. I. John, "Type-2 Fuzzy Representations of Lung Scans to Predict Pulmonary Emboli," *Proc. of Joint 9th IFSA World Congress and 20th NAFIPS International Conference,* pp. 1902-1907, 2001.

Innocent P. R., John R. I. and J. King, "Type 2 Fuzzy ART: A Clustering Method for Linguistic Knowledge," SOFT98 Workshop on Soft Computing, De Montfort Univ., July, 1998.

Izumi, K., H. Tanaka and K. Asai, "Resolution of Composite Fuzzy Relational Equations of Type 2," *Trans. of the Inst. of Electronics and Communication Engineers of Japan (in Japanese), Part D*, vol. J66D, pp. 1107-1113, Oct. 1983.

John, R. I., Type-2 Inferencing and Community Transport Scheduling," *Proc. Fourth European Congress on Intelligent Techniques and Soft Computing*, EUFIT'96, pp. 1369-1372, Aachen, Germany, Sept. 1996.

John, R. I., "Type 2 Fuzzy Sets for Knowledge Representation and Inferencing," *Proc. IEEE FUZZ Conference*, IEEE World Congress on Computational Intelligence, pp. 1003-1008, Anchorage, AK, May, 1998.

John, R. I., "Type 2 Fuzzy Sets" *Expert Update*, Vol. 2, No 2, Summer 1999, ISSN 1465-4091, 1999.

John, R. I., "Fuzzy Sets of Type-2" *J. of Advanced Computational Intelligence*, 3(6), 499-508, 1999.

John, R. I., "Perception Modelling Using Type-2 Fuzzy Sets," Ph.D. Dissertation, De Montfort University, Leicester, LE1 9BH, United Kingdom, 2000.

John, R. I., "Embedded Interval Valued Fuzzy Sets," *Proc. IEEE FUZZ Conference*, pp. 1316-1321, 2002.

John, R. I. and S. Coupland, "Extensions to type-1 fuzzy logic: type-2 fuzzy logic and uncertainty," in *Computational Intelligence: Principles and Practice*, Gary Y. Yen and David B. Fogel (Eds.), IEEE Computational Intelligence Society, pp. 89-101. 2006.

John, R. I. and S. Coupland, "Type-2 fuzzy logic: a historical view," *IEEE Computational Intelligence Magazine*, vol. 2, pp. 57-62, February 2007.

John, R. I. and C. Czarnecki, "An Adaptive Type-2 Fuzzy System for Learning Linguistic Membership Grades," *Proc. IEEE FUZZ Conf.*, pp. 1552-1556, Seoul, Korea, 1999.

John, R. I. and P. R. Innocent, "Modeling Uncertainty in Clinical Diagnosis Using Fuzzy Logic," *IEEE Trans. on Systems, Man, and Cybernetics—Part B: Cybernetics*, vol. 35, pp. 1340-1350, Dec. 2005.

John, R. I., P. R. Innocent and M. R. Barnes, "Type 2 Fuzzy Sets and Neuro-Fuzzy Clustering or Radiographic Tibia Images," *Proc. IEEE FUZZ Conference*, pp. 1375-1380, Barcelona, Spain, July 1997; also, in *Proc. IEEE FUZZ Conference*, pp. 1373-1376, Anchorage, AK, May 1998.

John, R. I., P. R. Innocent and M. R. Barnes, "Neuro-Fuzzy Clustering of Radiographic Tibia Images Using Type-2 Fuzzy Sets," *Information Sciences*, vol. 125, pp. 65-82, 2000.

John, R. I. and S. Lake, "Modelling Nursing Perceptions Using Type-2 Fuzzy Sets," *Proc. of EUROFUSE 2001 Workshop on Preference Modelling and Applications*, pp. 241-246, 2001.

John, R. I. and S. Lake, "Type-2 Fuzzy Sets for Modelling Nursing Intuition" *Proc. of Joint 9th IFSA World Congress and 20th NAFIPS Int'l. Conf.*, pp. 1920-1925, 2001.

John, R. I. and J. M. Mendel, "Type-2 fuzzy logic and uncertainty," in *Encyclopedia of Complexity and System Science*, Springer-Verlag, GmbH Berlin Heidelberg, R. A. Myers (Ed.), to appear in 2008.

Karnik, N. N., *Type-2 Fuzzy Logic Systems*, Ph.D. Dissertation, University of Southern California, Los Angeles, CA 1998.

Karnik, N. N. and J. M. Mendel, "Introduction to Type-2 Fuzzy Logic Systems," in *Proc. 1998 IEEE FUZZ Conf.*, pp. 915-920, Anchorage, AK, May 1998.

Karnik, N. N. and J. M. Mendel, *An Introduction to Type-2 Fuzzy Logic Systems*, Univ. of Southern Calif., Los Angeles, CA, June 1998; see http://sipi.usc.edu/~mendel/report.

Karnik, N. N. and J. M. Mendel, "Type-2 Fuzzy Logic Systems: Type-Reduction," in *Proc. IEEE Conference on Systems, Man and Cybernetics*, pp. 2046-2051, San Diego CA, Oct., 1998.

Karnik, N. N. and J. M. Mendel, Applications of Type-2 Fuzzy Logic Systems to Forecasting of Time-Series," *Information Sciences*, vol. 120, pp. 89-111, 1999.

Karnik, N. N. and J. M. Mendel, "Applications of Type-2 Fuzzy Logic Systems: Handling the Uncertainty Associated With Surveys," *Proc. IEEE FUZZ Conference*, Seoul, Korea, August 1999.

Karnik, N. N. and J. M. Mendel, "Operations on Type-2 Fuzzy Sets," *Fuzzy Sets and Systems*, vol. 122, pp. 327-348, 2001.

Karnik, N. N. and J. M. Mendel, "Centroid of a type-2 fuzzy set," *Information Sciences*, vol. 132, pp. 195-220, 2001.

Karnik, N. N., J. M. Mendel and Q. Liang "Type-2 Fuzzy Logic Systems," *IEEE Trans. on Fuzzy Systems*, vol. 7, pp. 643-658, Dec. 1999.

Kawaguchi, M. F. and M. Miyakoshi, "Extended Triangular Norms in Type 2 Fuzzy Logic, *EUFIT '99 7th European Congress on Intelligent Techniques & Soft Computing*, Aachen, Germany, Sept., 1999.

Kilic, K., O. Uncu and I. B. Turksen, "A Type-2 Fuzzy Systems Modeling Algorithm," «WHERE??»

Kreinovich, V. and G. Xiang, "Towards fast algorithms for processing type-2 fuzzy data: extending Mendel's algorithms from interval-valued to a more general case," NAFIPS 2008, Paper # 60106, New York City, May 2008.

Lee, C.-H., J.-L. Hong, Y.-C. Lin and W.-Y. Lai, "Type-2 Fuzzy Neural Network Systems and Learning," *Intl. J. of Computational Cognition*, vol. 1, pp. 79-90, Dec. 2003.

Lee, C.-H., T.-W. Hu, C.-T. Lee and Y.-C. Lee, "A Recurrent Interval Type-2 Fuzzy Neural Network with Asymmetric Membership Functions for Nonlinear System Identification," *Proc. IEEE FUZZ Conference*, Paper # FS0354, Hong Kong, China, June 2008.

Lee, S. and K. H. Lee, "Comparison of Type-2 Fuzzy Sets With Satisfaction Function,"

Proc. 2nd Intl. Symposium on Advanced Intelligent Systems, pp. 436-439, 2001.

Lee, S. and K. H. Lee, "Shortest Path Problem in a Type-2 Weighted Graph," *J. of Korea Fuzzy and Intelligent Systems Society*, vol. 11, no. 6, pp. 528-531, 2001.

Lee, S. and K. H. Lee, "A Ranking Method for Type-2 Fuzzy Values," *J. of Korea Fuzzy and Intelligent Systems Society*, vol. 12, no. 4, pp. 341-346, 2003.

Lee, S., K. H. Lee and D. Lee, "Order Relation for Type-2 Fuzzy Values," *Proc. IEEE FUZZ Conference*, St. Louis, MO, May 2003.

Li, Y and Sun X., "Niche width and niche overlap: a method based on type-2 fuzzy set," *Ecological Research*, vol. 21, pp. 713-722, 2006.

Liang, Q. and J. M. Mendel, "An Introduction to Type-2 TSK Fuzzy Logic Systems," *Proc. IEEE FUZZ Conference*, Seoul, Korea, 1999.

Liang, Q. and J. M. Mendel, "Interval Type-2 Fuzzy Logic Systems," *Proc. IEEE FUZZ Conference*, San Antonio, TX, May 2000.

Liang, Q. and J. M. Mendel, "Decision Feedback Equalizer for Nonlinear Time-Varying Channels Using Type-2 Fuzzy Adaptive Filters," *Proc. IEEE FUZZ Conference*, San Antonio, TX, May 2000.

Liang, Q. and J. M. Mendel, "Interval Type-2 Fuzzy Logic Systems: Theory and Design," *IEEE Trans. on Fuzzy Systems*, vol. 8, pp. 535–550, 2000.

Liang, Q. and J. M. Mendel, "Equalization of Nonlinear Time-Varying Channels Using Type-2 Fuzzy Adaptive Filters," *IEEE Trans. on Fuzzy Systems*, vol. 8, pp. 551–563, Oct. 2000.

Liang, Q. and J. M. Mendel, "Designing Interval Type-2 Fuzzy Logic Systems Using an SVD–QR Method: Rule Reduction," *Int'l. J. of Intelligent Systems*, vol. 15, pp. 939–957, 2000.

Liang, Q. and J. M. Mendel, "Overcoming Time-Varying Co-Channel Interference Using Type-2 Fuzzy Adaptive Filter," *IEEE Trans. on Circuits and Systems*, pp. 1419-1428, Dec. 2000.

Liang, Q. and J. M. Mendel, "Modeling MPEG VBR Video Traffic Using Type-2 Fuzzy Logic Systems," in *Granular Computing: An Emerging Paradigm*, Springer-Verlag, 2000.

Liang, Q. and J. M. Mendel, "MPEG VBR Video Traffic Modeling and Classification Using Fuzzy Techniques," *IEEE Trans. on Fuzzy Systems*, pp. 183-193, Feb. 2001.

Liang, Q. and L. Wang, "Sensed Signal Strength Forecasting for Wireless Sensors Using Interval Type-2 Fuzzy Logic System," *Proc. IEEE FUZZ Conference*, pp. 25-30, Reno, NV, May 2005.

Liang, Q., N. N. Karnik and J. M. Mendel, "Connection Admission Control in ATM Networks Using Survey-Based Type-2 Fuzzy Logic Systems," *IEEE Trans. on Systems, Man and Cybernetics Part C: Applications and Reviews*, vol. 30, no. 3, pp. 329-339, Aug. 2000.

Lin, P.-Z., C.-F. Hsu and T.-T. Lee, "Type-2 Fuzzy Logic Controller Design for Buck DC-DC Converters," *Proc. IEEE FUZZ Conference*, pp. 365-370, Reno, NV, May 2005.

Liu, F. and J. M. Mendel, "An *Interval Approach* to fuzzistics for interval type-2 fuzzy sets," 2007 IEEE Int'l. Conf. on Fuzzy Systems, London UK, July 23-26, 2007, pp. 1030-1035.

Liu, F., "An efficient centroid type-reduction strategy for general type-2 fuzzy logic system," *Information Sciences*, vol. 178, pp. 2224-2236, 2008.

Liu, F. and J. M. Mendel, "Aggregation Using the Fuzzy Weighted Average, as Computed by the KM Algorithms," *IEEE Trans. on Fuzzy Systems*, vol. 16, pp. 1-12, February 2008.

Liu, Z., Y. Zhang and Y. Wang, "A type-2 fuzzy switching control system for biped robots," *IEEE Trans. on Systems, Man and Cybernetics*, vol. 37, pp. 1202-1213, November 2007.

Liu, Z.-Q. and Y.-K. Liu, "Fuzzy Possibility Space and Type-2 Fuzzy Variable," *Proc. of IEEE Symposium on Foundations of Computational Intelligence (FOCI 2007)*, pp. 616-621, Honolulu , HI, April 2007.

Lucas, L. A., T. M. Centeno and M. R. Delgado, "General Type-2 Fuzzy Inference Systems: Analysis, Design and Computational Aspects," *Proc. IEEE FUZZ Conference*, pp. 1107-1112, London, UK, July 2007.

Lynch, C., H. Hagras and V. Callaghan, "Embedded Type-2 FLC for Real-Time Speed Control of Marine and Traction Diesel Engines." *Proc. IEEE FUZZ Conference*, pp. 347-352, Reno, NV, May 2005.

Lynch C., H. Hagras and V. Callaghan, "Using uncertainty bounds in the design of embedded real-time type-2 neuro-fuzzy speed controller for marine diesel engines. *Proc. IEEE FUZZ Conference*, Vancouver, CA, pp. 7217-7224, July 2006.

Lynch, C., H. Hagras and V. Callaghan, "Parallel Type-2 Fuzzy Logic Co-Processors for Engine Management," *Proc. IEEE FUZZ Conference*, pp. 907-912, London, UK, July 2007.

Mabuchi, S., "An Interpretation of Membership Functions and the Properties of General Probabilistic Operators as Fuzzy Set Operators, II: Extension to Three-Valued and Interval-Valued Fuzzy Sets," *Fuzzy Sets and Systems*, vol. 92, pp. 31-50, Nov. 1997.

Martínez, R., O. Castillo and L. T. Aguilar, "Optimization with Genetic Algorithms of Interval Type-2 Fuzzy Logic Controllers for an Autonomous Wheeled Mobile Robot: A Comparison Under Different Kinds of Perturbations," *Proc. IEEE FUZZ Conference*, Paper # FS0225, Hong Kong, China, June 2008.

Melgarejo, M. C. A. and C. A. Penha-Reyes, "Implementing interval type-2 fuzzy processors," *IEEE Computational Intelligence Magazine*, vol. 2, pp. 63-71, February 2007.

Melgarejo, M. C. A., A. Garcia, and C. A. Penha-Reyes, "Pro-Two: A Hardware Based Platform for Real Time Type-2 Fuzzy Inference," *Proc. IEEE FUZZ Conference*,

Budapest, Hungary, pp. 977-982, July 2004.

Melgarejo, M. C. A., C. A. Penha-Reyes and A. Garcia, "Computational Model and Architectural Proposal for a Hardware Type-2 Fuzzy System," *Proc. 2ⁿᵈ IASTED Conf. Neural Network and Computational Intelligence,* Grindewald, pp. 279-284, 2004.

Melin, P. and O. Castillo, "Intelligent Control of Non-Linear Dynamic Plants Using Type-2 Fuzzy Logic and Neural Networks," in *Proc. of Int'l. Conf. NAFIPS-FLINT 2002*, pp. 22-27, New Orleans, LA, June 2002.

Melin, P. and O. Castillo, "A New Method for Adaptive Model-Based Control of Non-Linear Plants Using Type-2 Fuzzy Logic and Neural Networks," *Proc. IEEE FUZZ Conference*, pp. 420-425, St. Louis, MO, May 2003.

Melin, P. and O. Castillo, "A New Approach for Quality Control of Sound Speakers Combining Type-2 Fuzzy Logic and the Fractal Dimension," in *Proc. of Int'l. Conf. NAFIPS 2003*, pp. 20-25, Chicago, USA, July 2003.

Melin, P. and O. Castillo, "A New Method for Adaptive Control of Non-Linear Plants Using Type-2 Fuzzy Logic and Neural Networks," *Int'l. J. of General Systems*, vol. 33, pp. 289-304, 2004.

Mencattini, A., M. Salmeri, S. Bertazzoni, R. Lojacono, E. Pasero and W. Moniaci, "Short term local meteorological forecasting using type-2 fuzzy systems," *Lecture Notes on Computer Science,* Springer-Verlag, vol. 3931, pp. 95-104, March 2006.

Mencattini, A., M. Salmeri and R. Lojacono, "Type-2 fuzzy sets for modeling uncertainty in measurements," *IEEE Int'l. Workshop on Advance Methods for Uncertainty Estimation in Measurement*, April 2006.

Mencattini, A., M. Salmeri and R. Lojacono, "Estimation of Uncertainty in Measurement by Means of Type-2 Fuzzy Variables," *Proc. IEEE FUZZ Conference*, pp. 499-504, London, UK, July 2007.

Mendel, J. M., "Computing With Words, When Words Can Mean Different Things to Different People," in *Proc. of Third International ICSC Symposium on Fuzzy Logic and Applications*, Rochester Univ., Rochester, NY, June 1999.

Mendel, J. M., "Uncertainty, Fuzzy Logic, and Signal Processing," *Signal Proc. J.,* vol. 80, pp. 913-933, 2000.

Mendel, J. M., "On the Importance of Interval Sets in Type-2 Fuzzy Logic Systems," *Proceedings of Joint 9ᵗʰ IFSA World Congress and 20ᵗʰ NAFIPS Int'l. Conf.*, Vancouver, British Columbia, Canada, July 25-28, 2001, pp. 1647-1652.

Mendel, J. M. "The Perceptual Computer: an Architecture for Computing With Words," *Proceedings of Modeling With Words Workshop* in *Proc. IEEE FUZZ Conference*, Melbourne, Australia, Dec. 2-5, 2001, pp. 35-38.

Mendel, J. M., "An Architecture for Making Judgments Using Computing With Words," *Int. J. Appl. Math. Comput. Sci.*, vol. 12, No. 3, pp. 325-335, 2002.

Mendel, J. M., "Uncertainty, Type-2 Fuzzy Sets, and Footprints of Uncertainty," *Proc. 9ᵗʰ*

Int'l. Conf. on Information Processing and Management of Uncertainty in Knowledge Based Systems, Annecy, France, 2002, pp. 325-331; also in *Intelligent Systems for Information Processing: From Representation to Applications* (B. Bouchon-Meunier, L. Foulloy and R. R. Yager, Eds.), Elsevier, NY, 2002, pp. 233-242.

Mendel, J. M., "Fuzzy Sets for Words: a New Beginning," *Proc. IEEE FUZZ Conference*, St. Louis, MO, May 26-28, 2003, pp. 37-42.

Mendel, J. M., "Type-2 Fuzzy Sets: Some Questions and Answers," *IEEE Connections*, Newsletter of the IEEE Neural Networks Society, vol. 1, Aug. 2003, pp. 10-13.

Mendel, J. M., "Computing Derivatives in Interval Type-2 Fuzzy Logic Systems," *IEEE Trans. on Fuzzy Systems*, vol. 12, pp. 84-98, Feb. 2004.

Mendel, J. M., "On Computing the Centroid of a *Symmetrical* Interval Type-2 Fuzzy Set," presented at IPMU 2004, Perugia, Italy, 2004.

Mendel, J. M., "On a 50% Savings in the Computation of the Centroid of a *Symmetrical* Interval Type-2 Fuzzy Set," *Information Sciences*, vol. 172, pp. 417-430, 2005.

Mendel, J. M., "Computing with words and its relationships with fuzzistics," *Information Sciences*, vol. 177, pp. 988-1006, 2007.

Mendel, J. M., "Advances in type-2 fuzzy sets and systems," *Information Sciences*, Vol. 177, pp. 84-110, 2007.

Mendel, J. M., "Type-2 fuzzy sets and systems: an overview," *IEEE Computational Intelligence Magazine*, vol. 2, pp. 20-29, February 2007.

Mendel, J. M., "Computing with words: Zadeh, Turing, Popper and Occam," *IEEE Computational Intelligence Magazine*, vol. 2, pp. 10-17, November 2007.

Mendel, J. M., "Tutorial on the uses of the interval type-2 fuzzy set's *wavy slice representation theorem,*" NAFIPS 2008, Paper # 60103, New York City, May 2008.

Mendel, J. M., "On type-2 fuzzy sets as granular models for words," in Handbook on Granular Computing, (W. Pedrcyz, Ed.), John Wiley &Sons, Ltd. West Sussex, UK, to appear in 2008.

Mendel, J. M. and R. I. John, "A Fundamental Decomposition of Type-2 Fuzzy Sets," *Proceedings of Joint 9th IFSA World Congress and 20th NAFIPS Int'l. Conf.*, Vancouver, British Columbia, Canada, July 25-28, 2001.

Mendel, J. M. and R. I. John, "Type-2 Fuzzy Sets Made Simple," *IEEE Trans. on Fuzzy Systems*, vol. 10, pp. 117-127, April 2002.

Mendel, J. M. and R. I. John, "Footprint of Uncertainty and its Importance to Type-2 Fuzzy Sets," *Proc. 6th IASTED int'l. Conf. on Artificial Intelligence and Soft Computing*, Banff, Alberta, Canada, July 2002, pp. 587-592.

Mendel, J. M. and F. Liu, "Super-Exponential Convergence of the Karnik-Mendel Algorithms for Computing the Centroid of an Interval Type-2 Fuzzy Set," *IEEE Trans. on Fuzzy Systems*, vol. 15, pp. 309-320, April, 2007.

Mendel, J. M., H. Hagras and R. I. John, "Standard Background Material About Interval

Type-2 Fuzzy Logic Systems that can be Used by All Authors," IEEE Computational Intelligence Society standard: can be accessed at http://ieee.cis.org/standards, 2006

Mendel, J. M., R. I. John and F. Liu, "On Using Type-1 Fuzzy Set Mathematics to Derive Interval Type-2 Fuzzy Logic Systems," *Proc. of NAFIPS*, June 2005, Ann Arbor, MI.

Mendel, J. M., R. I. John and F. Liu, "Interval type-2 fuzzy logic systems made simple," *IEEE Trans. on Fuzzy Systems*, vol. 14, pp. 808-821, December 2006.

Mendel, J. M. and Q. Liang, "Pictorial Comparisons of Type-1 and Type-2 Fuzzy Logic Systems," in *Proc. IASTED Int'l Conference on Intelligent Systems & Control*, Santa Barbara, CA, Oct., 1999.

Mendel, J. M. and F. Liu," On New Quasi-Type-2 Fuzzy Logic Systems," *Proc. IEEE FUZZ Conference*, Paper # FS0090, Hong Kong, China, June 2008.

Mendel, J. M. and D. Wu, "Cardinality, fuzziness, variance and skewness of itnerfval type-2 fuzzy sets," *Proc. of IEEE Symposium on Foundations of Computational Intelligence (FOCI 2007)*, pp. 375-382, Honolulu, HI, April 2007.

Mendel, J. M. and H. Wu, "Centroid Uncertainty Bounds for Interval Type-2 Fuzzy Sets: Forward and Inverse Problems," *Proc. of IEEE FUZZ Conference*, Budapest, Hungary, pp. 947-952, July 2004.

Mendel, J. M. and H. Wu, "Properties of the Centroid of an Interval Type-2 Fuzzy Set, Including the Centroid of a Fuzzy Granule, *Proc. IEEE FUZZ Conference*, pp. 341-346, Reno, NV, May 2005.

Mendel, J. M., and H. Wu, "New Results About the Centroid of an Interval Type-2 Fuzzy Set, including the centroid of a fuzzy granule," *Information Science*s, vol. 177, pp. 360-377, 2007.

Mendel, J. M. and H. Wu, "Type-2 fuzzistics for symmetric interval type-2 fuzzy sets: Part 1, forward problems," *IEEE Trans. on Fuzzy Systems*, vol. 14, pp. 781-792, December 2006.

Mendel, J. M. and H. Wu, "Type-2 fuzzistics for symmetric interval type-2 fuzzy sets: Part 2, inverse problems," *IEEE Trans. on Fuzzy Systems*, vol. 15, pp. 301-308, April 2007.

Mendel, J. M. and H. Wu, "Type-2 fuzzistics for non-symmetric interval type-2 fuzzy sets: forward problems," *IEEE Trans. on Fuzzy Systems*, in press, 2007.

Mendel, J. M., R. I. John and F. Liu, "On Using Type-2 Fuzzy Set Mathematics to Derive Interval Type-2 Fuzzy Logic Systems," *Proc. North American Fuzzy Info. Processing Society (NAFIPS)*, pp. 528-533, Ann Arbor, MI, June 2005.

Mendez, G. M., "Orthogonal-Back Propagation Hybrid Learning Algorithm for Type-2 Fuzzy Logic Systems," *Proc. of NAFIPS 04 IEEE Int'l. Conf. on Fuzzy Sets*, IEEE, pp. 899-902, June 27-30 2004, Banff, Alberta Canada.

Mendez, G. M. and O. Castillo, "Interval Type-2 TSK Fuzzy Logic Systems Using

Hybrid Learning Algorithm," *Proc. IEEE FUZZ Conference*, pp. 230-235, Reno, NV, May 2005.

Mendez, G. M. and I. L. Juarez, "First-order Interval Type-2 TSK Fuzzy Logic Systems Using Hybrid Learning Systems," *WSEAS Trans. on Computers*, Issue 4, Vol. 4, April 2005, ISSN 1109-2750.

Mendez, G. M. and I. L. Juarez, "Orthogonal-Back Propagation Hybrid Learning Algorithm for Interval Type-1 Non-Singleton Type-2 Fuzzy Logic Systems," *WSEAS Trans. on Systems*, Issue 3, Vol. 4, March 2005, ISSN 1109-2777.

Mendez G. M. and M. de los Angeles Hernandez, "Interval type-1 non-singleton type-2 TSK fuzzy logic systems using hybrid training method RLS-BP," *Proc. of IEEE Symposium on Foundations of Computational Intelligence (FOCI 2007)*, pp. 370-374, Honolulu , HI, April 2007.

Mendez, G. M., A. Cavazos, L. Leduc and R. Soto, "Hot Strip Mill Temperature Prediction Using Hybrid Learning Interval Singleton Type-2 FLS," *Proc. of IASTED Int'l. Conf. MODELING AND SIMULATION*, ACTA Press 380-059, pp. 380-385, Feb. 2003, Palm Springs, CA, USA.

Mendez, G. M., A. Cavazos, L. Leduc and R. Soto, "Modeling of a Hot Strip Mill Temperature Using Hybrid Learning for Interval Type-1 and Type-2 Non-Singleton Type-2 FLSs," *Proc. of IASTED Int'l. Conf. ARTIFICIAL INTELLIGENCE AND APPLICATIONS*, ACTA Press 403-073, pp. 529-533.Sept. 2003, Benalmádena, Spain.

Mendoza, O. and P. Melin, "Extension of the Sugeno integral with interval type-2 fuzzy logic, NAFIPS 2008, Paper # 61001, New York City, May 2008.

Mendoza, O., P. Melin, O. Castillo and G. Licea, "Type-2 fuzzy logic for improving training data and response integration in modular neural networks for image recognition," in *Foundations of Fuzzy Logic and Soft Computing* (P. Melin et al, Eds.), Proc. of IFSA 2007, Cancun, Mexico, June 2007, Springer-Verlag, Berlin, Heidelberg, pp. 604-612.

Mitchell, H. B., "Pattern Recognition Using Type-II Fuzzy Sets," *Information Sciences*, vol. 170, pp. 409-418, 2005.

Mizumoto, M. "Comparison of Various Fuzzy Reasoning Methods," *Proc. 2nd IFSA Congress*, Tokyo, Japan, pp. 2-7, July 1987.

Mizumoto, M. and K. Tanaka, "Some Properties of Fuzzy Sets of Type-2," *Information and Control*, vol. 31, pp. 312-340, 1976.

Mizumoto, M. and K. Tanaka, "Fuzzy Sets of Type-2 Under Algebraic Product and Algebraic Sum," *Fuzzy Sets and Systems*, vol. 5, pp. 277-290, 1981.

Musikasuwan, S., Ozen, T., Garibaldi, J.M., "An Investigation into the Effect of Number of Model Parameters on Performance in Type-1 and Type-2 Fuzzy Logic Systems," *Proc. 10th Information Processing and Management of Uncertainty in Knowledge Based Systems (IPMU 2004)*, Perugia, Italy, pp. 1593-1600, July 2004.

Ngo, L. T., L. P. The, P. H. Nguyen and K. Hirota, "On approximate representation of

type-2 fuzzy sets using triangulated irregular network," in *Foundations of Fuzzy Logic and Soft Computing* (P. Melin et al, Eds.), Proc. of IFSA 2007, Cancun, Mexico, June 2007, Springer-Verlag, Berlin, Heidelberg, pp. 584-593.

Nie, M and W. W. Tan, "Towards an Efficient Type-Reduction Method for Interval Type-2 Fuzzy Logic Systems," *Proc. IEEE FUZZ Conference*, Paper # FS0339, Hong Kong, China, June 2008.

Nieminen, J., "On the Algebraic Structure of Fuzzy Sets of Type-2," *Kybernetica*, vol. 13, no. 4, 1977.

Niewiadomski, A., "Interval-Valued and Interval Type-2 Fuzzy Sets: a Subjective Comparison," *Proc. IEEE FUZZ Conference*, pp. 1198-1203, London, UK, July 2007.

Nguyen, H. T., V. Kreinovich and Q. Zuo, "Interval-Valued Degrees of Belief: Applications of Interval Computations to Expert Systems and Intelligent Control," *Int'l. J. of Uncertainty, Fuzziness and Knowledge-Based Systems*, vol. 5, pp. 317-358, 1997.

Ozen, T. and J. M. Garibaldi, "Investigating Adaptation in Type-2 Fuzzy Logic Systems Applied to Umbilical Acid-Base Assessment," *Proc. the 2003 European Symposium on Intelligent Technologies (EUNITE 2003)*, Oulu, Finland, pp. 289-294, July 2003.

Ozen, T., Garibaldi, J.M., Musikasuwan, S., "Modelling the Variation in Human Decision Making," *Proc. North American Fuzzy Information Processing Society (NAFIPS 2004)*, Alberta, Canada, June 2004.

Ozen, T., Garibaldi, J.M., Musikasuwan, S., "Preliminary Investigations into Modelling the Variation in Human Decision Making," *Proc. 10th Information Processing and Management of Uncertainty in Knowledge Based Systems (IPMU 2004)*, Perugia, Italy, pp. 641-648, July 2004.

Ozen, T., Garibaldi, J.M., Musikasuwan, S., "Effect of Type-2 Membership Function Shape on Modelling Variation in Human Decision Making," *Proc. IEEE FUZZ Conference*, Budapest, Hungary, July 2004.

Ozkan, I., Turksen, B., "Entropy Assessment For Type-2 Fuzziness", *Proc. IEEE FUZZ Conference*, Budapest, Hungary, July 2004.

Paetz, J. "On the role of numerical preciseness for generalization, classification, type-1 and type-2 fuzziness," *Proc. of IEEE Symposium on Foundations of Computational Intelligence (FOCI 2007)*, pp. 208-213, Honolulu , HI, April 2007.

Park, S. and H. L.-Kwang, "Type-2 Fuzzy Hypergraphs Using Type-2 Fuzzy Sets," *J. of Advanced Computational Intelligence*, vol. 4, pp. 362-367, 2000.

Park, S. and H. L.-Kwang, "A designing Method for Type-2 Fuzzy Logic Systems Using Genetic Algorithms," *Proc. of Joint 9th IFSA World Congress and 20th NAFIPS Intl. Conference*, Vancouver, Canada, pp. 2567-2572, 2001.

Picinelli, G. and M. C. Mont, "A Type 2 Fuzzy Set Based Model for Adaptive Information Retrieval," Hewlett Packard Report, HPL-98-27, 1998.

Prassl, W. F., J. M. Peden and K. W. Wong, "A process-knowledge management approach for assessment and mitigation of drilling risks," *J. of Petroleum Science and Engineering*, vol. 49, pp. 142– 161, 2005.

Rahimi, S., M. Cobb, A. Zhou, D. Ali, H. Yang and F. E.Petry, "An Inexact Inferencing Strategy for Spatial Objects With Determined and Indeterminate Boundaries," *Proc. IEEE FUZZ Conference*, St. Louis, MO. Pp. 778-783, 2003.

Ren, Q. and M. Balazinski, "High order type-2 TSK fuzzy logic system," NAFIPS 2008, Paper # 50020, New York City, May 2008.

Rhee, F. C.-H, "Uncertain fuzzy clustering: insights and recommendations," *IEEE Computational Intelligence Magazine*, vol. 2, pp. 44-56, February 2007.

Rhee, F., C.-H, and C. Hwang, "A Type-2 Fuzzy C-Means Clustering Algorithm," *Proc. IEEE FUZZ Conference*, Melbourne, Australia, pp. 1926-1929, Dec, 2001.

Rhee, F., C.-H, and C. Hwang, "An Interval Type-2 Fuzzy Perceptron," *Proc. IEEE FUZZ Conference*, Honolulu, HI, pp. 1331-1335, May 2002.

Rhee, F., C.-H, and C. Hwang, "An Interval Type-2 Fuzzy *K*-Nearest Neighbor," *Proc. IEEE FUZZ Conference*, pp. 802-807, Honolulu, HI, May 2002.

Rhee, F., C.-H. and B.-I. Choi, "Interval Type-2 Fuzzy Membership Function Design and its Application to Radial Basis Function Neural Networks, *Proc. IEEE FUZZ Conference*, pp. 2047-2052, London, UK, July 2007.

Rickard, J. T., J. Aisbett and G. Gibbon, "Knowledge representation and reasoning in conceptual spaces," *Proc. of IEEE Symposium on Foundations of Computational Intelligence (FOCI 2007)*, pp. 583-590, Honolulu, HI, April 2007.

Rickard, J. T., J. Aisbett, G. Gibbon and D. Morgenthaler, "Fuzzy subsethood for type-n fuzzy sets," NAFIPS 2008, Paper # 60101, New York City, May 2008.

Rutkowska, D., "Type-2 Fuzzy Neural Networks: an Interpretation Based on Fuzzy Inference Neural Networks With Fuzzy Parameters," *Proc. IEEE FUZZ Conference*, Honolulu, HI, May 2002.

Rutkowski, L. and J. Starczewski, "From Type-1 to Type-2 Fuzzy inference Systems, Part 1," *Proc. V Conference on Neural Networks and Soft Computing*, Zakopane, Poland, pp. 46-51, June 6-10, 2000.

Rutkowski, L. and J. Starczewski, "From Type-1 to Type-2 Fuzzy inference Systems, Part 2," *Proc. V Conference on Neural Networks and Soft Computing*, Zakopane, Poland, pp. 52-64, June 6-10, 2000.

Schwartz, D. G., "The Case for an Interval-Based Representation of Linguistic Truth," *Fuzzy Sets and Systems*, vol. 17, pp. 153-165, 1985.

Schwartz, D. G., "The Case for an Interval-Based Representation of Linguistic Truth," *Fuzzy Sets and Systems*, vol. 17, pp. 153-165, 1985.

Sepulveda, R., O. Castillo, P. Melin, A. Rodriguez-Diaz and O. Montiel, "Handling Uncertainties in Controllers Using Type-2 Fuzzy Logic" *Proc. IEEE FUZZ Conference*, pp. 248-253, Reno, NV, May 2005.

Sepulveda, R., O. Castillo, P. Melin, A. Rodriguez-Diaz and O. Montiel, "Integrated Development Platform for Intelligent Control Based on Type-2 Fuzzy Logic," *Proc. North American Fuzzy Info. Processing Society (NAFIPS)*, pp., 607-610, Ann Arbor, MI, June, 2005.

Sepulveda, R., O. Castillo, P. Melin, A. Rodriguez-Diaz and O. Montiel, "Experimental Study of Intelligent Controllers Under Uncertainty Using Type-1 and Type-2 Fuzzy Logic," *Information Sciences*, vol. 177, pp. 2023-2048, 2007.

Sepulveda, R., O. Castillo, P. Melin, O. Montiel, and L. T. Aguilar," Evolutionary optimization of interval type-2 membership functions using the human evolutionary model," *Proc. IEEE FUZZ Conference*, pp. 410-415, London, UK, July 2007.

Shu, H. and Q. Liang, "Wireless Sensor Network Lifetime Analysis Using Interval Type-2 Fuzzy Logic Systems, *Proc. IEEE FUZZ Conference*, Reno, NV, pp. 19-24, May 2005.

Starczewski, J., "Extended triangular norms," submitted for publication, 2005a.

Starczewski, J., "A triangular type-2 fuzzy logic system," submitted for publication, 2005b.

Starczewski, J., "Extended triangular norms on Gaussian fuzzy sets," Proc. of EUSFLAT-LFA, pp. 872-877, Barcelona, Spain, Sept. 2005c.

Starczewski, J. and L. Rutkowski, "Connectionist Structures of Type-2 Fuzzy inference Systems," PPAM 2001, Lecture Notes in Computer Science 2328 (R. Wyrzykowski et al., eds.), Springer-Verlag, Berlin Heidelberg, pp. 634-642, 2002.

Starczewski, J. and L. Rutkowski, "Neuro-Fuzzy Inference Systems of Type 2,"*Proc. of 9th Intl. Conf. on Neural Information Processing (ICONIP)*, Orchid Country Club, Singapore, Nov. 18-22, 2002.

Starczewski, J. and L. Rutkowski, "Interval Type-2 Neuro-Fuzzy Systems Based on Interval Consequents," *Neural Networks and Soft Computing*, Physica Verlag, Heidelberg, pp. 570-577, 2003.

Sugeno, M., "Fuzzy theory, III," *J. of the Society of Instrument and Control Engineers* (in Japanese), vol. 22, pp. 454-458, May 1983.

Takahashi, H., "Subjective Evaluation Model for Drivability Using Fuzzy Evaluation Knowledge From the Coefficients of the ARMA Model," *Japanese J. of Fuzzy Theory and Systems*, vol. 5, pp. 161-183, 1993.

Tan, W. W. and J. Lai, "Development of a Type-2 Fuzzy Proportional Controller," *Proc. IEEE FUZZ Conference,* Budapest, Hungary, pp. 1305-1310, July2004.

Tan, W. W., C. L. Foo and T. W. Chua, "Type-2 Fuzzy System for ECG Arrhythmic Classification," *Proc. IEEE FUZZ Conference*, pp. 859-864, London, UK, July 2007.

Thiele, H., "A New Approach to Type-2 Fuzzy Sets," *Proc. Congress of Logic Applied to Technology (LAPTEC)*, Sao Paulo, Brazil, pp. 12-14, Nov. 2001.

Thiele, H. "On Approximate Reasoning With Type-2 Fuzzy Sets," *Proc. IPMU Conference*, Annecy, France, pp. 355-362, July 1-5, 2002.

Thiele, H., "Do We Need Fuzzy Sets of Higher Types?" *East West Fuzzy Colloquium 2002* (19th Zittau Fuzzy Colloquium), Zittau, Germany, Sept. 4-6, 2002.

Thiele, H., "On Some Different Interpretations oft eh Generalized Modus Ponens Using Type-2 Fuzzy Sets," *The Congress of Logic Applied to Technology*, LAPTEC, Sao Paulo, Brazil, Nov. 11-13, 2002.

Thovutikul, S. A. Auephanwiriyakul and N. T.-Umpon, "Micorcalcificaiton Detection in Mammograms Using Interval Type-2 Fuzzy Logic Systems," *Proc. IEEE FUZZ Conference*, pp. 1427-1431, London, UK, July 2007.

Torres, P. and D. Sáez, "Type-2 Fuzzy Logic Identification Applied to the Modeling of a Robot Hand," *Proc. IEEE FUZZ Conference*, Paper # FS0216, Hong Kong, China, June 2008.

Turksen, I., "Interval Valued Fuzzy Sets Based on Normal Forms," *Fuzzy Sets and Systems*, vol. 20, pp. 191-210, 1986.

Turksen, I., "Interval-Valued Fuzzy Uncertainty," *Proc. of Fifth IFSA World Congress*, pp. 35-38, 1993.

Turksen, I., "Interval-Valued Fuzzy Sets and Fuzzy Connectives," *Interval Computations*, vol. 4, pp. 125-142, 1993.

Turksen, I. B., "Type I and Interval Type II Fuzzy Sets and Logics," in *Advances in Fuzzy Theory and Techniques*, vol. 3, (P. P. Wang, ed.), Bookright Press, Raleigh, NC, pp. 31-82, 1995.

Turksen, I. B., "Type I and Type II Fuzzy System Modeling," *Fuzzy Sets and Systems*, vol. 106, pp. 11-334, 1999.

Turksen, I. B., "Fuzzy Disjunctive and Conjunctive Canonical Forms: a Foundation for Interval-Valued Fuzzy Techniques," *Proc. of Joint 9th IFSA World Congress and 20th NAFIPS Intl. Conference*, Vancouver, Canada, pp. 2353-2358, 2001.

Turksen, I. B., "Type 2 Representation and Reasoning for CWW," *Fuzzy Sets and Systems*, vol. 127, pp. 17-36, 2002.

Uncu, O and I. B. Turksen, "Discrete interval type-2 fuzzy system model using uncertainty in learning parameters," *IEEE Trans. on Fuzzy Systems*, vol. 15, pp. 90-106, February 2007.

Urias, J., P. Mellin and O. Castillo, "A Method for Response Integration in Modular Neural Networks Using Interval Type-2 Fuzzy Logic," *Proc. IEEE FUZZ Conference*, pp. 247-252, London, UK, July 2007.

Wagenknecht, M. and K. Hartmann, "Application of Fuzzy Sets of Type-2 to the Solution of Fuzzy Equation Systems," *Fuzzy Sets and Systems*, vol. 25, pp. 183-190, 1988.

Wagner, C. and H. Hagras, "A Genetic Algorithm Based Architecture for Evolving Type-2 Fuzzy Logic Controllers for Real World Autonomous Mobile Robots," *Proc. IEEE FUZZ Conference*, pp. 193-198, London, UK, July 2007.

Wagner, C. and H. Hagras, "z Slices – Towards Bridging the Gap Between Interval and

General Type-2 Fuzzy Logic," *Proc. IEEE FUZZ Conference*, Paper # FS0126, Hong Kong, China, June 2008.

Wang, D. and L. Acer, "An Analysis of Type-1 and Type-2 Fuzzy Logic Systems," *Proc. of the IEEE Intl. Symposium on Intelligent Control/Intelligent Systems and Semiotics*, Cambridge, MA, Sept. 15-17, 1999.

Wang, C.-H., C. –S. Cheng and T. – T. Lee, "Dynamical Optimal Training for Interval Type-2 Fuzzy Neural Network (T2FNN)," *IEEE Trans. on Systems, Man, and Cybernetics—Part B: Cybernetics*, vol. 24, pp. 1462-1477, June 2004.

Wang, M., N. Li and S. Li, "Type-2 T-S Fuzzy Modeling for the Dynamic Systems with Measurement Noise," *Proc. IEEE FUZZ Conference*, Paper # FS0116, Hong Kong, China, June 2008.

Wills, K., R. John and S. Lake, "Combining Categories in Nursing Assessment Using Interval Valued Fuzzy Sets," *Proc. 10th Information Processing and Management of Uncertainty in Knowledge Based Systems (IPMU 2004)*, Perugia, Italy, July 2004.

Wu, D. and J. M. Mendel, "Uncertainty measures for interval type-2 fuzzy sets," *Information Sciences*, vol. 177, pp. 5378-5393, 2007.

Wu, D. and J. M. Mendel, "Enhanced Karnik-Mendel algorithms for interval type-2 fuzzy sets and systems," 2007 NAFIPS, San Diego, CA, June 2007.

Wu, D. and J. M. Mendel, "A vector similarity measure for interval type-2 fuzzy sets," 2007 IEEE Int'l. Conf. on Fuzzy Systems, London UK, July 23-26, 2007, pp. 17-22.

Wu, D. and J. M. Mendel, "Perceptual reasoning: a new computing with words engine," 2007 IEEE Granular Computing Conference, San Jose, CA, November 2007.

Wu, D. and J. M. Mendel, "Aggregation Using the Linguistic Weighted Average and Interval Type-2 Fuzzy Sets," *IEEE Trans. on Fuzzy Systems*, vol. 15, pp. 1145-1161, December 2007.

Wu, D. and J. M. Mendel, "A Vector Similarity Measure for Interval Type-2 Fuzzy Sets and Type-1 Fuzzy Sets," *Information Sciences*, vol. 178, pp. 381-402, 2008.

Wu, D. and J. M. Mendel, "Perceptual Reasoning Using Interval Type-2 Fuzzy Sets: Properties," *Proc. IEEE FUZZ Conference*, Paper # FS0291, Hong Kong, China, June 2008.

Wu, D. and J. M. Mendel, "Enhanced Karnik-Mendel Algorithms," to appear in *IEEE Trans. on Fuzzy Systems*, 2008.

Wu D. and W. W. Tan, "A Type-2 Fuzzy Logic Controller for the liquid-Level process," *Proc. IEEE FUZZ Conference,* Budapest, Hungary, July 2004, pp. 953-958.

Wu D. and W. W. Tan, "A Simplified Architecture for Type-2 FLSs and its Application to Nonlinear Control," *Proc. IEEE Conf. on Cybernetics and Intelligent Systems*, Singapore, Dec. 2004, pp. 485-490.

Wu D. and W. W. Tan, "Genetic Learning and Performance Evaluation of Type-2 Fuzzy Logic Controllers," submitted to *IEEE Trans. on Systems, Man, and Cybernetics—Part B: Cybernetics*, 2005.

Wu D. and W. W. Tan, "Theory of Equivalent Type-1 Fuzzy Logic Systems (ET1FLSs)," submitted for publication to *IEEE Trans. on Fuzzy Systems*, 2005.

Wu D. and W. W. Tan, "Type-2 FLS Modeling Capability Analysis," *Proc. IEEE FUZZ Conference*, pp. 242-247, Reno, NV, May 2005.

Wu D. and W. W. Tan, "Computationally Efficient Type-Reduction Strategies for a Type-2 Fuzzy Logic Controller," *Proc. IEEE FUZZ Conference*, pp. 353-358, Reno, NV, May 2005.

Wu, H. and J. M. Mendel, "Data Analysis and Feature Extraction for Ground Vehicle Identification Using Acoustic Data," *Proceedings of 2001 Meeting of the MSS Specialty Group on Battlefield Acoustic and Seismic Sensing, Magnetic and Electric Field Sensors*, Applied Physics Lab., John Hopkins Univ., Laurel MD, Oct. 23, 2001.

Wu, H. and J. M. Mendel, "Introduction to Uncertainty Bounds and Their Use in the Design of Interval Type-2 Fuzzy Logic Systems," *Proc. IEEE FUZZ Conference*, Melbourne, Australia, Dec. 2-5, 2001.

Wu, H. and J. M. Mendel, "Classification of Ground Vehicles From Acoustic Data Using Fuzzy Logic Rule-Based Classifiers: Early Results," *Proceedings of SPIE-Aerosense Conf.: Unattended Ground Sensor Technologies and Applications IV*, Orlando, Florida, April 2002, pp. 62-72.

Wu, H. and J. M. Mendel, "Uncertainty Bounds and Their Use in the Design of Interval Type-2 Fuzzy Logic Systems," *IEEE Trans. on Fuzzy Systems*, vol. 10, pp. 622-639, Oct. 2002.

Wu, H. and J. M. Mendel, "*Uncertainty* Versus *Choice* in Rule-Based Fuzzy Logic Systems," *Proc. IEEE FUZZ Conference*, Honolulu, Hawaii, May 2002, pp. 1336-1341.

Wu, H., J. M. Mendel, "Antecedent Connector Word Models for Interval Type-2 Fuzzy Logic System", *Proc. IEEE FUZZ Conference,* Budapest, Hungary, July 2004.

Wu, H. and J. M. Mendel, "Classifier Designs for Binary Classifications of Ground Vehicles," *Unattended Ground Sensor Technologies and Applications V* (E. M. Carapressa, Ed.) Proc. of SPIE Vol. 5090, April 2003, Orlando, FL., pp. 122-133.

Wu, H. and J. M. Mendel, "Multi-Category Classification of Ground Vehicles Using Fuzzy Logic Rule-Based Classifiers: Early Results," *Proc. of the 7th IASTED Int'l. Conf. Artificial Intelligence and Soft Computing*, Banff, Canada, July 2003, pp. 52-57.

Wu, H. and J. M. Mendel, "Multi-Category Classification of Ground Vehicles Based on Their Acoustic Emissions," *Unattended/Unmanned Ground, Ocean, and Air Sensor Technologies* VI, part of Defense and Security, April 2004, Orlando, FL.

Wu, H. and J. M. Mendel, "Multi-category Classification of Ground Vehicles Based on the Acoustic Data of Multiple Terrains Using Fuzzy Logic Rule-Based Classifiers," SPIE Defense & Security Conf., Unattended Ground Sensor Technologies and Applications VII, *Proc. of SPIE, vol. 5786*, Orlando, FL, March 28-April 1, 2005.

Wu, H. and J. M. Mendel, "Classification of battlefield ground vehicles using acoustic

features and fuzzy logic rule-based classifiers," *IEEE Trans. on Fuzzy Systems*, vol. 15, pp. 56-72, February, 2007.

Wu, K. C., "Fuzzy Interval Control of Mobile Robots," *Computers Elect. Eng.*, vol. 22, pp. 211-229, 1996.

Yager, R. R., "Fuzzy Subsets of Type II in Decisions," *J. of Cybernetics*, vol. 10, pp. 137-159, 1980.

Yager, R. R., "Containment and Specificity for Type-2 Fuzzy Sets," Technical Report #MII-2706, Machine Intelligence Institute, Iona College, New Rochelle, NY 10801, 2007.

Yildirim, M. T. A. Basturk and M. E. Yuksel, "A detail-preserving type-2 fuzzy logic filter for impulse noise removal from digital images," *Proc. IEEE FUZZ Conference*, pp. 751-756, London, UK, July 2007.

Ying, H. "General interval type-2 Mamdani fuzzy systems are universal approximators," NAFIPS 2008, Paper 50070, New York City, May 2008.

Zadeh, L. A., "The Concept of a Linguistic Variable and Its Application to Approximate Reasoning–1," *Information Sciences*, vol. 8, pp. 199-249, 1975.

Zarandi, M. H. F., E. Neshat, I. B. Turksen and B. Rezaee, "A Type-2 Model for Stock Market Analysis," *Proc. IEEE FUZZ Conference*, pp. 276-281, London, UK, July 2007.

Zeng, J. and Liu, Z.-Q., "Interval Type-2 Fuzzy Hidden Markov Models," *Proc. IEEE FUZZ Conference*, Budapest, Hungary, July2004.

Zeng, J. and Liu, Z.-Q., "Type-2 fuzzy sets for pattern classification," *Proc. of IEEE Symposium on Foundations of Computational Intelligence (FOCI 2007)*, pp. 193-200, Honolulu, HI, April 2007.

Zhou, S.-M., F. Chiclana, R. I. John and J. M. Garibaldi "Type-2 OWA Operators — Aggregating Type-2 Fuzzy Sets in Soft Decision Making," *Proc. IEEE FUZZ Conference*, Paper # FS0157, Hong Kong, China, June 2008.

Zhou, S.-M., R. John. F. Chiclana and J. M. Garibaldi, "New Type-2 Rule Ranking Indices for Designing Parsimonious Interval Type-2 Fuzzy Logic Systems," *Proc. IEEE FUZZ Conference*, pp. 853-858, London, UK, July 2007.