REFERENCES

[1]   Adriaans, P., and Zantinqe, D. <u>Data Mining</u>. Addison Wesley, 1996.

[2]   Gupta, A., Paer, D., and Lam, S. M. Generalized Analytic Rule Extraction for Feedforward Neural Networks. <u>IEEE Transactions on Knowledge and Data Engineering</u>. 11, 3 (November 1999): 985–991.

[3]   Hanyashi, Y., Setiono, R., and Yoshida, K. Diagnosis of Hepalobiliary Disorders Using Rules Extracted from Artificial Neural Networks. <u>IEEE International Fuzzy Systems Conference</u>. pp. 344–348, Seoul, Korea, August 22–25, 1999.

[4]   Jagielska, I. Linguistic Rule Extraction from Neural Networks for Descriptive Data Mining. <u>Knowledge-Based Intelligent Electronic System Proceeding</u>. 2 (April 1998): 89-92.

[5]   Fu, L. Knowledge Discovery by Inductive Neural Networks. <u>IEEE Transactions on Knowledge and Data Engineering</u>. 11, 3 (November 1999): 992–998.

[6]   Tan, A. W. Cascade ARTMAP: Integration Neural Computing and Symbolic Processing. <u>IEEE Transaction on Neural Networks</u>. 8, 2 (March 1997): 237-250.

[7]   Setiono, R. Extractions M-of-N Rules from trained Neural network. <u>IEEE Transactions on Neural Networks</u>. 11, 2 (March 2000): 512–519.

[8]   Shavlik, J. W. A Framework for Combining Symbolic and Neural Learning. <u>Technical Report 1123</u>. Computer Sciences Department, University of Wisconsin-Madison, November 1992.

[9]   Towell, G. <u>Symbolic Knowledge and Neural Networks: Insertion, Refinement and Extraction</u>. Ph.D.'s Thesis, Computer Science Department, University of Wisconsin, Madison, 1991.

[10] Setiono, R., and Leow, W. K. Generating Rules from Trained Network Using Fast Pruning. International Joint Conference on Neural Networks. 6 (July 1999): 4095-4098.

[11] Saito, K., and Nakano, R. Medical Diagnostic Expert System Based on PDP Model. IEEE International Conference on Neural Networks. 1 (July 1988): 255-262.

[12] Taha, I. A., and Ghosh, J. Symbolic Interpretation of Artificial Neural Networks. IEEE Transactions on Knowledge and Data Engineering. 11, 3 (May/June 1999): 448-463.

[13] He, Z., Wei, C., Yang, L., Gao, X., and Yao, S. Extracting Rules from Fuzzy Neural Network by Particle Swarm Optimization. The 1998 IEEE International Conference on Evolutionary Computing, IEEE World Congress on Computational Intelligence. pp. 74–77, 1998.

[14] Kasabov, N., and Woodford, B. Rule Insertion and Rule Extraction from Evolving Fuzzy Neural Networks: Algorithms and Applications for Building Adaptive, Intelligent Expert Systems. IEEE International Fuzzy System Conference. pp.1406–1411, Seoul, Korea, August 22–25, 1999.

[15] Vahed, A., and Omlin, C. W. Rule Extraction from Recurrent Neural Networks using a symbolic Machine Learning Algorithm. The 6th International Conference on Neural Information Proceeding. 2 (1999): 712–717.

[16] Ishikawa, M. Rule Extraction by Successive Regularization. Neural Networks. 13 (2000): 1171-1183.

[17] Yao, S., Wei, C., and He, Z. Evolving Fuzzy Neural Networks for Extracting Rules. The 5th IEEE International Conference on Fuzzy System 1996. 1 (1996): 361-267.

[18] Bologna, G. Rule Extraction from Multi Layer Perceptron with Staircase Activation Functions. IEEE-INNS-ENNS International Joint Conference on Neural Networks 2000. 3 (2000): 419-424.

[19] Hruschka, E. R., and Ebecken, M. F. F. Using a Clustering Genetic Algorithm for Rule Extraction from Artificial Neural Networks. IEEE Symposium on Combination of Evolutionary Computing and Neural Networks 2000. pp. 199-206, 2000.

[20] Hruschka, E. R., and Ebecken, N. F. F. Rule Extraction from Neural Networks: Modified RX Algorithm. International Joint Conference on Neural Networks. 4 (July 1999): 2504-2508.

[21] Tsukimoto, H. Extracting Rules from Trained Neural Network. IEEE Transaction on Neural Networks. 11, 2 (March 2000): 377-389.

[22] Neumann, J. Classification and Evaluation of Algorithms for Rule Extraction From Artificial Neural Networks. Ph.D.'s Summer Project, ICCS, Division of Informatics, University of Edinburgh, 1998.

[23] Wettayaprasit, W., and Lursinsap, C. Rule Extraction Based on Hidden Neural Activation Interval Projection on Each Dimensional Axis. Artificial Neural Network in Engineering Conference. pp. 95-100, St. Louis, Missouri, November 2001.

[24] Wettayaprasit, W., and Lursinsap, C. Neural Rule Extraction Based on Activation Projection with Certainty Factor Refinement. International Joint Conference on Neural Networks, IEEE World Congress on Computational Intelligence 2002. 2 (May 2002): 1730–1735.

[25] Ishibuchi, H., Nii, M., and Tanaka, K. Fuzzy-arithmetic-based Approach for Extracting Positive and Negative Linguistic Rules from Trained Neural Networks. IEEE International Fuzzy Systems Conference. 3 (August 1999): 1382-1386.

[26] Wlodzislaw, D. A New Methodology of Extraction, Optimization and Application of Crisp and Fuzzy Rules. IEEE Transactions on Neural Networks. 12, 2 (March 2001): 277-306.

[27] Prechelt, L. Proben1: A Set of Neural Network Benchmark Problems and Benchmarking Rules. Technical Report 21/94. Informatik University Karlsruhe, Karlsruhe, Germany, September 1994.

[28] McGarry, K. J., Tail, J., Wermter S., and MacIntyre, J. Rule-Extraction From Radial Basis Function Networks. Artificial Neural Networks Proceeding. pp. 613–618, September 1999.

[29] Mangasarian, O. L., Setiono R., and Wolberg, W. H. Pattern Recognition via Linear Programming: Theory and Application to Medical Diagnosis, In T. F. Coleman, and Y. Li, (eds.) Large-scale Numerical Optimization. pp. 22-30. Philadelphia: SIAM, 1990.

[30] Corbett-Clark, T. A., and Tarassenko, L. A Principled Framework and Technique for Rule Extraction From Multi-Layer Perceptrons. The 5th International Conference on Artificial Neural Networks. pp. 233-238, Lausanne, Switzerland, October 1997.

VITA

Wiphada Wettayaprasit was born in Chiangmai, Thailand on August 9, 1965. She is the older of two daughters of Mr. Pitak Phuthaphun and Mrs. Siriwilai Phuthaphun. Mrs. Wettayaprasit entered the Faculty of Science, Prince of Songkla University and was granted a Bachelor of Science degree in Mathematics in 1987. She received her Master of Science in Computer Science in 1992 from the University of Missouri-Columbia, USA. Mrs. Wettayaprasit began her career as a programmer at Computer Center, Prince of Songkla University. She transfered to Computer Science Department, Faculty of Science at the same university where she accepted a position as a lecturer in 1993. In 2000, she received a scholarship from the Ministry of University Affairs to further her study for the doctorate program at Chulalongkorn University. In 2002, she visited the University of Louisiana at Lafayette for her research. Mrs. Wettayaprasit married to Dr. Prawat Wettayaprasit on January 23, 1987 in Columbia, Missouri. They have two daughters: Tantaporn Wettayaprasit and Tantanisa Wettayaprasit.