Curriculum Vitae — Anthony S. Maida

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Education:

1973	B.A.,	Mathematics,	State University of New York at Buffalo
1980	Ph.D.,	Cognitive Psychology,	State University of New York at Buffalo
1981	M.S.,	Computer Science,	State University of New York at Buffalo

Experience:

1981–1983	Postdoctoral Fellowship, Cognitive Science,	Brown University
1983–1984	Postdoctoral Fellowship, Cognitive Science,	UC Berkeley
1984–1991	Assistant Professor, Computer Science,	The Pennsylvania State University
1991–2001	Assistant Professor, Computer Science,	The University of Louisiana at Lafayette
1999–2001	Assistant Professor, Cognitive Science,	The University of Louisiana at Lafayette
2001–2010	Associate Professor, Cognitive Science,	The University of Louisiana at Lafayette
2004–2006	Member Team CajunBot, DARPA Challenge,	The University of Louisiana at Lafayette
2001 —	Associate Professor, Computer Science,	The University of Louisiana at Lafayette
2010 —	Graduate Coordinator, Computer Science,	The University of Louisiana at Lafayette

Current research: Biologically realistic computational models of neuronal networks and machine learning.

Earlier research: Architectures for cognition, computational linguistics, knowledge representation, meta-reasoning, user modeling and belief reasoning.

Refereed Journal Articles:

1. A. Maida, S. Shapiro, "Intensional Concepts in Propositional Semantic Networks." *Cognitive Science*, 1982, *6*(4), 291–330. Reprinted in *Readings in Knowledge Representation*, R. J. Brachman and H. J. Levesque (Eds.), Morgan Kaufmann Publishers, 1985.
2. A. Maida, "Selecting a Humanly Understandable Representation for Reasoning about Knowledge." *International Journal of Man-Machine Studies*, 1985, *22*, 151–161.
3. K. Iwama, A. Maida, "Organizing and Integrating Edge Segments for Texture Discrimination". *Journal of Experimental and Theoretical Artificial Intelligence*, 1989, *1*(2), 113–132.

4. A. Maida, "Maintaining Mental Models of Agents who have Existential Misconceptions." *Artificial Intelligence*, 1991, *50*(3), 331–383.

5. A. Maida, J. Wainer, S. Cho, "A Syntactic Approach to Introspection and Reasoning about the Beliefs of Other Agents." *Fundamenta Informaticae*, 1991, *15*(3-4), 333–356.

6. M. Kim, A. Maida, "Reliability-measure Theory: A Nonmonotonic Semantics." *IEEE Transactions on Knowledge and Data Engineering*, 1993, *5*(1), 41–51.

7. A. Maida, "Propositionally Representing Incomplete Knowledge about Existence." *Journal of Experimental and Theoretical Artificial Intelligence*, 1993, *5*(1), 185–197.

8. A. Maida, S. Tang, "Description-based Communication for Autonomous Agents under Ideal Conditions." *Journal of Experimental and Theoretical Artificial Intelligence*, 1997, 9(1), 103-125.

9. C. Günay, A. Maida, "Temporal Binding as an Inducer for Connectionist Recruitment over Delayed Lines." *Neural Networks*, 2003, 16(5-6), 593-600.

10. C. Günay, A. Maida, "Using Temporal Binding for Hierarchical Recruitment of Conjunctive Concepts over Delayed Lines." *Neurocomputing*, 2006, 69(4-6), 317-367, DOI: 10.1016/j.neucom.2005.03.008.

11. C. Günay, A. Maida, "A Stochastic Population Approach to the Problem of Stable Recruitment Hierarchies in Spiking Neural Networks." *Biological Cybernetics*, 2006, 94, 33-45, DOI: 10.1007/s00422-005-0023-y.

12. B. Rowland, A. Maida, I. Berkeley, "Synaptic Noise as a Means of Implementing Weight-perturbation Learning." *Connnection Science*, 2006, 18(1), 69-79, DOI: 10.1080/09540090500386551.

13. A. Lakhotia, S. Golconda, A. Maida, P. Mejia, A. Puntambeker, G. Seetharaman, S. Wilson, "CajunBot: Architecture and Algorithms." *Journal of Field Robotics*, 2006, 23(8), 555-578, DOI: 10.1002/rob.20129).

14. A. S. Maida, S. Golconda, P. Mejia, A. Lakhotia, C. Cavanaugh, "Subgoal-based local navigation and obstacle avoidance using a grid-distance field." *Journal of Vehicle Autonomous Systems*, 2006, 4(2-4), 122-142.

15. A. Moustafa, A. S. Maida, "Using Temporal Difference Learning to Simulate Working Memory Performance in a Model of the Prefrontal Cortex and Basal Ganglia," *Cognitive Systems Research*, 2007, 8, 262-281.

16. N. N. Vempala, A. S. Maida, "Effects of Memory Size on Melody Recognition in a Simulation of Cohort Theory," *Cognitive Systems Research*, 2011, 12, 66-78.

17. A. Gupta, M. Ayhan, A. S. Maida, "Natural Image Bases to Represent Neuroimaging Data." *Journal of Machine Learning Research*, 28(3), 2013, 987-994.

18. A. Tavanaei, A. S. Maida, "A Minimal Spiking Neural Network to Rapidly Train and Classify Handwritten Digits in Binary and 10–Digit Tasks," *International Journal of Advanced Research in Artificial Intelligence (IJARAI)*, 4(7), 2015, DOI: 10.14569/IJARAI.2015.040701.

19. A. Tavanaei, A. S. Maida, "A Spiking Network that Learns to Extract Spike Signatures from Speech Signals," *Neurocomputing*, 2017, 240, 191-199, DOI: 10.1016/j.neucom.2017.01.088.

20. A. Tavanaei, A. S. Maida, "Training a Hidden Markov Model with a Bayesian Spiking Neural Network", *Journal of Signal Processing Systems*, Springer, 90(2), 2018, pp. 211-220.

21. A. Tavanaei, A. Maida "Representation Learning Using Event-based STDP," *Neural Networks*, 2018, 105, 294-303.

22. S. V. Venna, A. Tavanaei, R. N. Gottumukkala, V. V. Raghavan, A. S. Maida, S. Nichols "A Novel Data-Driven Model for Real-Time Influenza Forecasting," *IEEE Access*, 2019, 7, 7691-7701.

23. A. Tavanaei, A. Maida "BP-STDP: Approximating backpropagation using spike timing dependent plasticity," *Neurocomputing*, 2019, 330, 39-47.

24. A. Tavanaei, M. Ghodrati, S. R. Kheradpisheh, T. Masquelier, A. Maida "Deep Learning in Spiking Neural Networks," *Neural Networks*, 2019, 47-63.

Articles in Refereed Conference Proceedings:

1. A. Maida "Knowing Intensional Individuals and Reasoning about Knowing Intensional Individuals." *Proceedings of the Eighth International Joint Conference on Artificial Intelligence*, 1983, 382–384, Karlsruhe, W. Germany.

2. A. Maida, R. Millward, "A Psychologically Plausible Representation for Reasoning about Knowledge." *Proceedings of the Sixth Annual Conference of the Cognitive Science Society*, 1984, 248–251, June, Boulder, Colorado.

3. A. Maida, "Processing Entailments and Accessing Facts in a Uniform Frame System." *Proceedings of the American Association for Artificial Intelligence*, 1984, 233–236, August, Austin, Texas.

4. A. Maida, "Introspection and Reasoning about the Beliefs of Other Agents." *Proceedings of the Cognitive Science Society*, 1986, 187–195, Amherst, MA, August.

5. M. Kim, A. Maida, "Frame and Inheritance Systems." *Proceedings of the Second International Symposium on Methodologies for Intelligent Systems*, 1987, 209–216, Charlotte, NC, October.

6. A. Maida "A Uniform Architecture for Rule-Based Meta Reasoning and Representation." *Proceedings of the Second International Symposium on Methodologies for Intelligent Systems*, 1987, 115–122, Charlotte, NC, October.

7. M. Kim, A. Maida "Frame Systems and Inheritance Systems". *Fall Joint Computer Conference*, 1987, 636–643, Dallas, TX, October.

8. A. Maida "A Uniform Architecture for Rule-Based Meta Reasoning and Representation: A Case Study." *Fall Joint Computer Conference*, Dallas, TX, 1987, 652–657, October.

9. A. Maida "A Syntactic Approach to Mental Correspondence." *Proceedings of the Canadian Society for Computational Studies of Intelligence*, Edmonton, Alberta, 1988, 53–58, June.

10. M. Deng, A. Maida "Conflict Detection in a Connectionist Rule Interpreter." *Proceedings of the Second International Symposium on Artificial Intelligence*, 1989, October, ITESM/Centro de Investigación en Informatica, Monterrey, Mexico.

11. J. Wainer, A. Maida, "Good and Bad News in Formalizing Generalized Implicatures." *Proceedings of the 16th Annual Meeting of the Berkeley Linguistics Society*, 1990, 530–540, Berkeley, CA, February 16–19.

12. J. Wainer, A. Maida, "Uses of Nonmonotonic Logic in Natural Language Understanding: Implicatures." *Proceedings of the Fifth International Symposium on Methodologies for Intelligent Systems*, 1990, 553–559, Knoxville, TN, October 24–27.

13. D. Dunn, W. Higgins, A. Maida, J. Wakeley, "Texture Boundary Classification using Gabor Elementary Functions." *SPIE Conference on Visual Communications and Image Processing '91: Image Processing*, 1991, Boston, MA, November 11–13, 541–552, Volume 1606.

14. A. Maida, "Propositionally Representing Incomplete Knowledge about Existence." *Proceedings of the AAAI Spring Symposium on Propositional Knowledge Representation*, March 25–27, 1992, 105–114, Stanford University.

15. A. Maida, "Knowledge Representation Requirements for Description-based Communication." *Principles of Knowledge Representation and Reasoning: Proceedings of the Third International Conference (KR'92)*, In B. Nebel, C. Rich, and W. Swartout, editors, Morgan Kaufmann, San Mateo, CA, 1992, 232–243.

16. S. Cho, A. Maida, "Using a Bayesian Framework to Identify the Referents of Definite Descriptions." *Proceedings of the AAAI Fall Symposium on Probabilistic Approaches to Natural Language*, October 23–25, 1992, 39–46, Boston, MA. (These proceedings are to be published in the Morgan Kaufmann techreport series.)

17. A. Maida, S. Tang, "Knowledge Management to Support Description-based Communication." *Proceedings of the Seventh Florida Artificial Intelligence Research Symposium*, May, 1994, 184–188, Pensacola Beach, FL.

18. A. Maida, S. Tang, "Temporal Aspects of Description-based Communication for Autonomous Agents." *Proceedings of the AAAI–94 workshop on Spatial and Temporal Reasoning*, August, 1994, 69–75, Seattle, WA.

19. A. Maida, S. Tang, "Recovery from Referent Misidentifications in Systems of Communicating Agents." *Proceedings of the 1995 AAAI Spring Symposium on Lessons Learned from Implemented Software Architectures for Physical Agents*, March, 1995, 213–223, Stanford University.

20. A. Maida, S. Giambrone, H. Zhou, "Naming Observed Objects." *Proceedings of the 1995 AAAI Fall Symposium on Embodied Language and Action*, November, 1995, 73–79, Cambridge, MA. This paper also appears in *Proceedings of the 1995 AAAI Fall Symposium on Computational Models for Integrating Language and Vision*.

21. A. Maida, G. Yuen, C. Prince, "Visualizing Neurodynamics in a Model for Spatial Navigation." *Proceedings of the World Conference on Neural Networks*, September, 1996, 694–697, San Diego, CA, published by Lawrence Erlbaum.

22. G. Yuen, A. Maida, C. Prince, "Neurodynamics of a Spatial Navigation Model with Long-Term Depression." *Proceedings of the World Conference on Neural Networks*, September, 1996, 733–736, San Diego, CA, published by Lawrence Erlbaum.

23. A. Maida, S. Tang, "Referent Misidentification and Recovery Among Communicating Agents." *Proceedings of the Second International Conference on Multiagent Systems (ICMAS–96)*, Edmund Durfee (Ed.), December, 1996, 196–203, Kobe, Japan, ISBN 0–1–57735–013–8.

24. M. Lagoudakis, A. Maida "Neural Maps for Mobile Robot Navigation." *Proceedings of the International Joint Conference on Neural Networks* (on CD–ROM), July, 1999, IEEE Catalog Number: 99CH36339C, received best presentation award for session.

25. A. Maida "Identifying Causal Structure in a Biological Network," *Proceedings of the 12th IEEE Conference on Tools with Artificial Intelligence (ICTAI–2000)*, November, 13–15, 2000. Vancouver, British Columbia. Published by IEEE Press, ISBN 0–7695–0909–6.

26. I. Berkeley, C. Günay, A. Maida, "The Value of Value Units: A Flawed Foray into Nonmonotonicity," in C. Dagli, A. Buczak, J. Ghosh, M. Embrechts, O. Ersay, and S. Kercel (Eds), (2000) *Intelligent Engineering Through Smart Artificial Networks*, Vol 10, Smart Engineering System Design: Neural Networks, Fuzzy Logic, Evolutionary Programming, Data Mining and Complex Systems, ASME Press (New York), pp. 127–132.

27. A. Maida, B. Rowland, C. Günay, "Synchronized Firing in a Time-delayed Neural Network." *Proceedings of the 14th International FLAIRS (Florida AI Research Society) Conference*, May 21–23, 2001, 485–488, Key West, Florida, AAAI Press, ISBN 0–1–57735–133–9.

28. A. Maida, B. Rowland, C. Günay, "Simulation of Planar I/F Networks with Delayed Connections." *Proceedings of the International Joint INNS–IEEE Conference on Neural Networks*, July 14–19, 2001, 302–307, Washington, DC, ISBN 0–7803–7044–9.

29. C. Günay, A. Maida, "The Required Measures of Phase Segregation in Distributed Cortical Processing." *Proceedings of the International Joint INNS–IEEE Conference on Neural Networks*, July 14–19, 2001, 290–295, Washington, DC, ISBN 0–7803–7044–9.

30. C. Günay, A. Maida, "Using Temporal Binding for Connectionist Recruitment Learning over Delayed Lines." *Proceedings of the International Joint INNS–IEEE Conference on Neural Networks*, July 2003, Portland, OR.

31. B. Rowland, A. Maida "Spatiotemporal Novelty Detection Using Resonance Networks." *Proceedings of the 17th Annual Florida AI Research Society Conference*, Miami Beach, FL, May 2004, 676-681.

32. N. N. Vempala, A. Maida, "Modeling Melody Recognition Using a Sequence Recognition Neural Network with Meta-Level Processes." *Proc Intl Joint Conf on Neural Networks (IJCNN)*, Atlanta, GA, June 14-19, 2009, 3204-3211.

33. D. James, A. Maida, "Sequential Hierarchical Recruitment Learning in a Network of Spiking Neurons." *Proc Intl Joint Conf on Neural Networks (IJCNN)*, Atlanta, GA, June 14-19, 2009, 1407-1413.

34. Jan-Phillip Tiesel, A. Maida, "Using Parallel GPU Architecture for Simulation of Planar I/F Networks." *Proc Intl Joint Conf on Neural Networks (IJCNN)*, Atlanta, GA, June 14-19, 2009, 3118-3123.

35. N. N. Vempala, A. S. Maida, "Modeling Melody Recognition Using a Cohort Network." *7th Triennial Conference of the European Society for the Cognitive Sciences of Music (ESCOM)*, Jyvaskyla, Finland, August 12-16, 2009, https://jyx.jyu.fi/dspace/handle/123456789/20925.

36. N. N. Vempala, A. S. Maida, "Extension of the SRNN Melody Recognition Modeling Framework." *Proceedings of the Eleventh International Conference on Music Perception and Cognition*, Seattle, WA, August 23-27, 2010, 672-676.

37. J. P. McCaffery, A. S. Maida, "Toward a causal topic model for video scene analysis." *The 2013 International Joint Conference on Neural Networks (IJCNN)*, Dallas, Texas, August 4-9, 2013, 1-8, DOI: 10.1109/IJCNN.2013.6706941.

38. B. A. Lemoine, A. S. Maida, "GPU facilitated unsupervised visual feature acquisition in spiking neural networks." *The 2013 International Joint Conference on Neural Networks (IJCNN)*, Dallas, Texas, August 4-9, 2013, DOI: 10.1109/IJCNN.2013.6706963.

39. S. Pourmohammad, R. Soosahabi, A. S. Maida, "An efficient character recognition scheme based on k-means clustering." *Fifth International Conference on Modeling, Simulation and Applied Optimization (ICMSAO)*, 2013, DOI: 10.1109/ICMSAO.2013.6552640.

40. A. Gupta, M. Ayhan, A. S. Maida,J. P. "Evaluation of autoencoders for bases to represent neuroimaging data." Neural Information Processing Systems (NIPS) Workshop: *Machine Learning and Interpretation in Neuroimaging*, Lake Tahoe, Nevada, December 9-10, 2013, https://sites.google.com/site/mlininips2013/proceedings-of-mlini-2012-1.

41. A. Tavanaei, A. S. Maida, "Studying the interaction of a hidden Markov model with a Bayesian spiking neural network." *IEEE International Workshop on Machine Learning for Signal Processing (MLSP)*, September 17-20, 2015, Boston, MA, USA, DOI: 10.1109/MLSP.2015.7324350.

42. A. Tavanaei, T. Masquelier, A. S. Maida, "Acquisition of visual features through probabistic spike-timing-dependent plasticity." International Joint Conference on Neural Networks (IJCNN), Vancouver, July, 2016, pp. 307-314.

43. P. Edgington, A. S. Maida, "Exact particle filter modularization improves runtime performance." 22nd European Conference on Artificial Intelligence (ECAI), The Hague, Holland, Aug 29 - Sept 2, 2016. *Frontiers in Artificial Intelligence and Applications*, 2016, 1397-1405.

44. A. Tavanaei, A. S. Maida, A. Kaniymattam, R. Logananthara j, "Towards recognition of protein function based on its structure using deep convolutional networks." IEEE Conference on Bioinformatics and Biomedicine (BIBM), 2016, 145-149, DOI: 10.1109/BIBM.2016.7822509.

45. A. Tavanaei, A. S. Maida, "Multi-layer unsupervised learning in a spiking convolutional neural network." *2017 International Joint Conference on Neural Networks* (IJCNN '17), Anchorage, May 14-19, 2017, 2023-2030.

46. A. Tavanaei, A. S. Maida, "Bio-Inspired Multi-Layer Spiking Neural Network Extracts Discriminative Features from Speech Signals," *Neural Information Processing: 24th International Conference on Neural Information Processing* (ICONIP '17), Nov 14-18, Ghangzhou, China, 2017, 899-908.

47. A. Tavanaei, N. Anandanadaraja, A. S. Maida, R. Logananthara j, "A deep learning model for predicting tumor suppressor genes and oncogenes from PDB structure," *2017 IEEE International Conference on Bioinformatics and Biomedicine* (BIBM), Nov. 13-16, Kansas City, Missouri, 2017, 613-617.

48. A. Tavanaei, Z. Kirby, A. Maida, "Training spiking ConvNets by STDP and gradient descent," *Proc. of the 2018 International Joint Conference on Neural Networks* (IJCNN), July 8-13, Rio de Janeiro, Brazil, 2018, 1643-1650.

49. C. Gaudet, A. Maida, "Deep quaternion networks," *Proc. of the 2018 International Joint Conference on Neural Networks* (IJCNN), July 8-13, Rio de Janeiro, Brazil, 2018, 1565-1572.

50. N. Elsayed, A. Maida, M. Bayoumi, "Empirical Function Activation Effects on Convolutional LSTM Learning," *2018 IEEE 30th Conference on Tools with Artificial Intelligence (ICTAI)*, 336-343.

51. A. Tavanaei, R. Gottumukkala, A. Maida, V. Raghavan, "Unsupervised learning for rank aggregation using parameterized function optimization", *Proc. of the 2018 International Joint Conference on Neural Networks* (IJCNN), July 8-13, Rio de Janeiro, Brazil, 2018, 3632-3639.

52. E. Beyazit, H. Hosseini, A. Maida, X. Wu, "Learning simplified decision boundaries from trapezoidal data streams," *International Conference on Artificial Neural Networks* (ICANN 2018), October, 2018, 508-517.

Workshop and Poster Presentations not Published in Proceedings:

1. A. Maida, "Constraint Propagation for Reasoning with Equality and Denotation." Presented September, 1990, SUNY at Buffalo, New York, *Proceedings of the Second Annual SNePS Workshop*.

2. D. Dunn, W. Higgins, J. Wakeley, A. Maida, "Texture Boundary Classification using Gabor Elementary Functions." *Seventh Workshop on Multidimensional Signal Processing*, September 23–25, 1991, Lake Placid, New York.

3. A. Maida, "Predicate Calculus Semantics and SNePS Ontology." Presented July, 1994, SUNY at Buffalo, *Proceedings of the 1994 SNePS Workshop*.

4. A. Maida, G. Yuen, "Visualizing Unwieldy Neural Networks." *International Conference on Non-linear Problems in Aviation and Aerospace*, Daytona Beach, May, 1998.

5. M. Lagoudakis, A. Maida, "A Polar Neural Map for Mobile Robot Local Navigation," Poster presentated at the *Third International Conference on Cognitive and Neural Sytems*, May, 1999, Boston University.

6. A. Maida, B. Rowland, C. Günay, "Simulations of Planar Integrate-and-Fire Networks with Delays and Refractory Periods," Poster presentated at the *Fifth International Conference on Cognitive and Neural Sytems*, June 2, 2001, Boston University.

7. C. Günay, A. Maida, "Tolerating Delays and Preventing Crosstalk in Direct-Indirect Connection Topologies with Neural Networks Employing Recruitment Learning." Poster presented at the *Sixth International Conference on Cognitive and Neural Systems*, May 2002, Boston University.

8. C. Günay, A. Maida, "A Robust Mechanism for Creating New Memories using Noisy Delays and Lateral Inhibition." Poster presented at the *Seventh International Conference on Cognitive and Neural Systems*, May 2003, Boston University.

9. B. Rowland, A. Maida, "The temporal segmentation capacity of integrate and fire networks with transmission delays." Poster presented at the *Seventh International Conference on Cognitive and Neural Systems*, May 2003, Boston University.

10. C. Günay, A. Maida, "A stochastic population approach to the problem of stable propagation of synchronized spike volleys in hierarchies." Poster presented at the *Twentieth Annual South East Nerve Net Conference*, Atlanta, Georgia, March 27, 2004.

11. B. Rowland, A. Maida, "Novelty detection and pattern completion in a minimalist model of the hippocampus." Poster presented at the *Eighth International Conference on Cognitive and Neural Systems*, May 22, 2004, Boston University.

12. A. Maida, C. Günay, "A Stochastic Population Approach to the Problem of Stable Propagation of Synchronized Spike Volleys." Poster presented at the *Fourteenth Annual Computational Neuroscience Meeting*, July 17-21, 2005, Madison, Wisconsin.

13. A. Moustafa, A. Maida, "Simulation of Cognitive and Motoric Action Selection in a Delayed-response Task." Poster presented at the *Computational Cognitive Neuroscience Conference*, November 10-11, 2005, Washington, DC.

14. A. Moustafa, A. Maida, "Simulation of the Uniform Selection Hypothesis in a Delayed-response Task." Poster presented at the *Computational and Systems Neuroscience Conference (Cosyne 06)*, March 5-8, 2006, Salt Lake City, Utah.

15. James, D., Tucker, P., and Maida, A. " Bilaterally Symmetrical Encoding in the Evolution of Artificial Neural Networks for Symmetry Detection." Late breaking paper in Proc *Proc of the 2006 Conference on Genetic and Evolutionary Computation (GECCO-2006)*, July 8-12, 2006, Seattle, WA.

16. B. A. Lemoine, A. S. Maida, "GPU facilitated unsupervised feature acquisition." *Annual Computational Neuroscience (CNS) Meeting*, July 21-26, 2012, Decatur, Georgia.

Book Chapters:

1. A. S. Maida, S. C. Shapiro, The article "Intensional Concepts in Propositional Semantic Networks" was reprinted in: *Readings in Knowledge Representation.* R. Brachman and H. Levesque (Eds.), Morgan Kaufmann, Los Altos, CA, August, 170–189, 1985. Previously appeared in *Cognitive Science* 6(4), 291–330, 1982.

2. A. S. Maida, Frame Theory. *Encyclopedia of Artificial Intelligence, 1st Edition* Wiley & Sons, Inc., New York, NY, 302–312, April, 1987.

3. A. S. Maida, M. Deng, A Language to Allow Expert Systems to have Beliefs about Their Users. In Charlie Ellis (Ed.), *Expert Knowledge and Explanation: The Knowledge-Language Interface*. Ellis Horwood, Chichester, 127–143, 1989.

4. A. S. Maida, Frames. *Encyclopedia of Artificial Intelligence, 2nd Edition* Wiley & Sons, Inc., New York, NY, 493–507, 1992.

5. A. S. Maida, Cognitive Computing and Neural Networks: Reverse Engineering the Brain. In V. N. Gudivada, V. V. Raghavan, V. Govindaraju, C. R. Rao (Eds), *Handbook of Statistics, Vol 35, Cognitive Computing: Theory and Applications*, 2016, 39-78.

Book Review:

1. Review of *Artificial Believers: The Ascription of Belief*, by Afzal Ballim and Yorick Wilks, Lawrence Erlbaum, 1991. *Minds and Machines*, 1995, *5*, 277–280.

News Media:

1. Appeared on Next@CNN for work on CajunBot Project, March 6, 2004.

Presentations within UL Lafayette

1. A. Maida "Computational Requirements for Description-based Communication." Presented to UL Lafayette Cognitive Science Group, February 12, 1993.
2. A. Maida, "Computer Science and the Brain." Presented to Students, Teachers, Alumni Coffee Hour and Talk, March 7, 1996.
3. A. Maida, "Visualizing a Neural Network Model of Rat Hippocampus." Presented at the Cognitive Science Colloquium Series, November, 13, 1996.
4. A. Maida "Interdisciplinary exploration of memory and intelligence." Presented to UL Lafayette Students for Psychology Day, March, 1997.
5. A. Maida "Connectionist Virtual Machines." Presented at the Cognitive Science Colloquium Series, February, 18, 1998.
6. A. Maida "Identifying Causal Structure in a Biologically Constrained Connectionist Network." Presented at the Institute of Cognitive Science Colloquium Series (Inaugural Lectures), October, 20, 1999.
7. A. Maida "The Idea of Biologically Constrained Connectionist Modeling." Presented at the Mind and Matter Colloquium Series, November, 12, 1999.
8. A. Maida "Artificial Intelligence." Presented to the UL Lafayette, Philosophy Club, February 10, 2000.
9. A. Maida "Circuits of the Brain." Presented to the Electrical Engineering Senior Seminar, February 21, 2000.
10. A. Maida "A Brain Computation Clock." Presented to the Center for Advanced Computer Studies 595 Seminar Series, October, 6, 2000.
11. A. Maida "Brain Statistics and Brain Organization." Presented to the Center for Advanced Computer Studies 595 Seminar Series, February, 9, 2001.
12. A. Maida, B Rowland, C. Günay, "From Connectionist Neurons to Spiking Neurons." Presented at the Mind and Matter Colloquium Series, Institute of Cognitive Science, February, 9, 2001.
13. A. Maida "Feedforward connectionist networks: an elementary tutorial." Presented at the Mind and Matter Colloquium Series, Institute of Cognitive Science, October 10, 2003.

14. A. Maida, "How Physicists Contribute to Computational Neuroscience." Colloqium given to UL Physics Department, February, 4, 2004.

15. A. Maida. "Training Neural Networks with Random Noise and Global Reward," Presented at the Mind and Matter Colloquium Series, Institute of Cognitive Science, September 24, 2004.

16. A. Maida. "Training Neural Networks with Random Noise and Global Reward," Presented at CACS Colloquium Series, Center for Advanced Computer Studies, October 15, 2004.

17. A. Maida "Parallel Computing and the Brain," Presented at CACS Colloquium Series, Center for Advanced Computer Studies, February, 10, 2006.

18. A, Maida. "Hierarchical Concurrency and the Brain," Presented at the Mind and Matter Colloquium Series, Institute of Cognitive Science, February 22, 2006.

Co-authors who are Current or Former Students (Listed Chronologically)

Kenzo Iwama, Jacques Wainer, Seyheong Cho, Minkoo Kim, Shaohua Tang, Mingqi Deng, Dennis Dunn, Heng Zhou, Christopher Prince, Michail Lagoudakis, Cengiz Günay, Benjamin Rowland, Ahmed Moustafa, Derek James, Steele Russell, Jan-Phillip Tiesel, Naresh Vempala, Sajjad Pourmohammad, Reza Soosahabi, Blake Lemoine, John McCaffery, Ashish Gupta, Murat Ayhan, Padraic Edgington, Amirhossein Tavanaei, Arun Kaniymattam.

Ph.D. Dissertations Supervised or Co-supervised:

1. Kenzo Iwama, *A Computational Study of Preattentive Textural Segmentation*. December, 1988, Department of Computer Science, The Pennsylvania State University.

2. Minkoo Kim, *The Semantics of Multicontext Interaction: An Approach to Reasoning with Defaults*, August, 1989, Department of Computer Science, The Pennsylvania State University.

3. Sehyeong Cho, *Reference Identification using a Bayesian Framework*. December, 1991, Department of Computer Science, The Pennsylvania State University.

4. Jacques Wainer, *Uses of Nonmonotonic Logic in Natural Language Understanding: Generalized Implicatures*. December, 1991, Department of Computer Science, The Pennsylvania State University.

5. Mingqi Deng, *Winner-Take-All Networks: Asynchronous Distributed Hand-shaking Algorithms with Two-stage Activation Update*. August 1992, Department of Computer Science, The Pennsylvania State University.

6. Dennis Dunn, *Designing Gabor Filters for Texture Segmentation*, August 1992, successfully defended thesis May 7, 1992, Department of Computer Science, The Pennsylvania State University. Note: I was originally the adviser for this thesis, but as the research evolved, it required a supervisor with a strong background in digital signal processing. Dr. William Higgins of the Department of Electrical Engineering at Penn State was the final supervisor of the thesis.

7. Christopher Prince, *Rat's Capabilities with Relations between Locations in Space*. Co-chaired with Daniel Povinelli, December, 1998, Center for Advanced Computer Studies, UL Lafayette. (Current address: Associate Professor, Department of Computer Science, University of Minnesota Duluth).

8. Cengiz Günay, *Hierarchical learning of conjunctive concepts in spiking neural networks*. December, 2003, Center for Advanced Computer Studies, UL Lafayette. (Current address: Postdoctoral Fellow, Jaeger Lab, Department of Biology, Emory University.)

9. Benjamin Rowland *A Mathematical Model of Novelty Detection and Episodic Memory in the Mammalian Hippocampus*. May, 2004, Institute of Cognitive Science, UL Lafayette. (Current address: Postdoctoral Fellow, Stein Lab, Department of Neurobiology and Anatomy, Wake Forest University School of Medicine).

10. Ahmed Moustafa *The Role of the Prefrontal Cortex and the Basal Ganglia in Delayed-response Task Performance: A Neural Model*. May, 2006, Institute of Cognitive Science, UL Lafayette.

11. Suresh Golconda, *CajunBot Path Planner Architecture for Autonomous Ground Vehicles in an Urban Environment*, Co-supervised with Arun Lakhotia, May 2010, Center for Advanced Computer Studies, UL Lafayette.

12. Naresh Vempala *Studying the Effects of Memory Size on Melody Recognition using a Neural Network Simulation of Cohort Theory*. May, 2010, Institute of Cognitive Science, UL Lafayette.

13. Ashish Gupta, *Neural Networks for Classification of MRI Scans for Alzheimer's Disease*. May, 2015.

14. Padraic Edgington, *Modular Bayesian Filters*. May 2015.

15. Amirhossein Tavanaei, *Spiking Neural Networks and Sparse Deep Learning*, May 2018.

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1. Michail G. Lagoudakis, "Local Mobile Robot Navigation with a Polar Neural Map." May, 1998, Center for Advanced Computer Studies, UL Lafayette.

2. Prashant Joshi, "Synthesis of a liquid state machine with Hopfield/Brody transient synchrony." December, 2002, Center for Advanced Computer Studies, UL Lafayette.

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4. Blake Lemoine, *A Linguistically Plausible, General Purpose Natural Language Generation System* May 2010, Center for Advanced Computer Studies, UL Lafayette.

5. Russell Danna, *Learning-assisted Market-based Optimization for Truck Task Scheduling*, May 2014, Center for Advanced Computer Studies, UL Lafayette.

Professional Service:

1. Ad hoc referee for the following organizations: *Cognitive Science*, *Computational Intelligence*, *CACM*, *Data and Knowledge Engineering*, *IEEE Transactions on Systems Man and Cybernetics*, *Journal of Experimental and Theoretical Artificial Intelligence*, *NSF*, *Encyclopedia of Artificial Intelligence*, *IEEE Computer*, *IEEE Transactions on Neural Networks*, and others.