## References

- [1] L. N. Long and A. Gupta, "Scalable Massively Parallel Artificial Neural Networks," in *Aerospace Conference- American Institute of Aeronautics and Astronautics*, 2005.
- [2] J. Heaton, "A Feedforward Neural Network," Heaton Research, Inc., 2012. [Online]. Available: http://www.heatonresearch.com/node/704. [Accessed 10 September 2012] University of Moratuwa, Sri Lanka.
- [4] DTREG: Software For Predictive Modeling and Forecasting, "Multilayer Perceptron Neural Networks," DTREG: Software For Predictive Modeling and Forecasting, [Online]. Available: http://www.dtreg.com/mlfn.htm. [Accessed 5 September 2012].
- [5] S.-i. Kazuhiro and K. Maizuru, "A Two Phase Method for Determining the Number of Neurons in the Hidden Layer of a 3-Layer Neural Network," in *SICE Annual Conference* 2010, 2010.
- [6] A. Kretinnin, Y. Bulygin and S. Valyuhov, "Intelligent Algorithm for Forecasting of Optimum Neurons Quantity in Perceptron with One Hidden Layer," in *International Joint Conference on Neural Networks (IJCNN 2008)*, 2008.
- [7] I. Degirmenciyan-Cartault, "A Multi-Agent Approach for Complex System Design," 2002. [Online]. Available: http://ftp.rta.nato.int/public//PubFullText/RTO/EN/RTO-EN-022///EN-022-

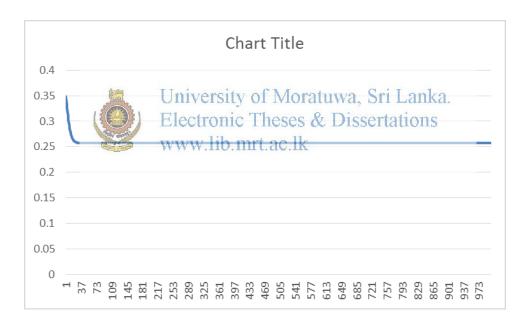
- 05.pdf. [Accessed 2012 August 27].
- [8] P. Stone, "Multiagent Systems," 24 September 1997. [Online]. Available: http://www.cs.cmu.edu/afs/cs/usr/pstone/public/papers/97MAS-survey/node2.html. [Accessed 26 August 2012].
- [9] C. Stergiou and D. Siganos, "NEURAL NETWORKS," Imperial College London, [Online]. Available: http://www.doc.ic.ac.uk/~nd/surprise\_96/journal/vol4/cs11/report.html. [Accessed 7 November 2012].
- [10] J. M. Miloš and R. R. Miroslav, "Optimal Selection of ANN Training and Architectural Parameters Using Taguchi Method: A Case Study," *FME Transactions*, vol. 39, no. 2, pp. 79-86, 2011.
- [11] R. Berteig, "Basic Concepts for Neural Networks," Cheshire Engineering Corporation, 2003. [Online]. Available: http://www.cheshireeng.com/Neuralyst/nnbg.htm. [Accessed 1 Octomber 2012].
- [12] University of Wisconsin, "A Neural Network Approach For Interpolating Species Density Patterns From Remotely Sensed & GIS data: An Example Using The Desert Tortoisenive University Moofatu Wisconsin, an [Qnline]. Available: http://pages.cs.wisc.edu/~bolo/shipyard/neural/tort.html\_[Accessed 1 Octomber 2012].
- [13] S. Amaresh, K. P. Sushanta and P. Sabyasachi, "Optimization of ANN Structure Using Adaptive PSO & GA and Performance Analysis Based on Boolean Identities," *International Journal of Computer & communication Technology*, vol. 2, no. VIII, pp. 70-77, 2011.
- [14] XLMiner, "XLMiner Data Mining Add-in For Excel," Frontline Systems, Inc, 2012. [Online]. Available: http://www.solver.com/xlminer-data-mining. [Accessed 5 November 2012].
- [15] N. Wanas, G. Auda, M. S. Kamal and F. Karray, "ON THE OPTIMAL NUMBER OF HIDDEN NODES IN A NEURAL NETWORK," in *Canadian Conference on Electrical and Computer Engineering*, Waterloo, 1998.
- [16] D. E. Rumelhart, G. E. Hinton and R. J. Williams, "Learning respresentations by back-propergation errors," *NATURE*, vol. 323, pp. 533-536, 1986.
- [17] B. Krose and P. v. d. Smagt, An Introduction to Neural Networks, University of Amsterdam, 1996.

- [18] Advanced Agent-Robotics Technology Lab, "Multi-Agent Systems," Carnegie Mellon University, [Online]. Available: http://www.cs.cmu.edu/~softagents/multi.html. [Accessed 5 2 2013].
- [19] G. Rzevski, "Modelling Large Complex Systems Using Multi-Agent Technology," in ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel/Distributed Computing, 2M12.
- [20] X. Dong, G. Xiong, J. Hou, F. Dong and T. R. Nyberg, "Vulnerability analysis of power grid based on multi-agent complex systems," in *IEEE International Conference on Service Operations, Logistics, and Informatics (SOLI)*, 2011.
- [21] Y. Lu Murphey and Z. Chen, "A Multi-Agent System for Complex Vehicle Fault Diagnostics and Health Monitoring," in *15th IEEE International Conference on Engineering of Complex Computer Systems*, Oxford, 2010.
- [22] X. Wu, P. Lou and D. Tang, "A Multi-agent Controller on Embedded System for Complex Mechatronics," in *Chinese Control and Decision Conference (CCDC 2009)*, Guilin, 2009.
- [23] G. Rzevski, S. Andreev, P. Shveykin, P. Skobelev and I. Yankov, "Multi-Agent Scheduler for Rent-a-car companies," in Forth International Conference on Industrial Applications of Holonic and Multi-Agent Systems, Linz, 2009.
- [24] G. Rzevsk, A. Glaschenko, A. Ivaschenko and P. Skobelev, "Multi-Agent Real-Time Scheduling System for Taxi Companies," in 8th Int. Conf. on Autonomous Agents and Multiagent Systems, Budapest, 2009.
- [25] G. Rzevski, P. Skobelev and V. Andreev, "MagentaToolkit: A Set of Multi-agent Tools for Developing Adaptive Real-Time Application," in *Third International Conference on Industrial Applications of Holonic and Multi-Agent Sys*, Regensburg, 2007.

## **Appendix A:**

# **XOR Training Graphs**

• Session :1 Error: 0.25738728816431566



#### • Session :4 Error : 0.02058792911945031



# • University of Moratuwa, Sri Lanka. :61Ecroin 01045876275458788 ertations www.lib.mrt.ac.lk



• Session :8 Error: 0.0099809688187786

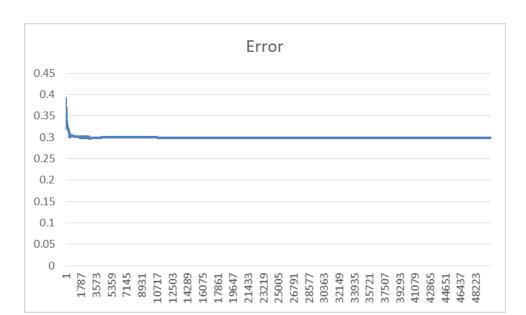




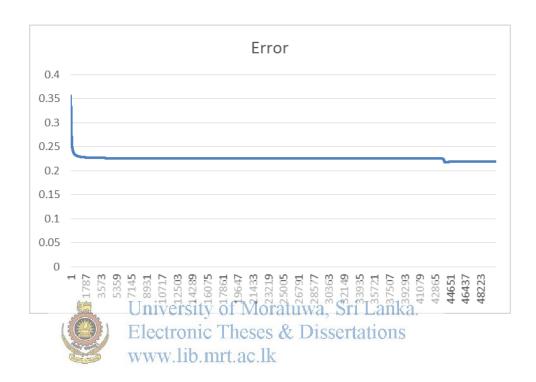
## **Appendix B:**

## **Isis Data Set Training Graphs**

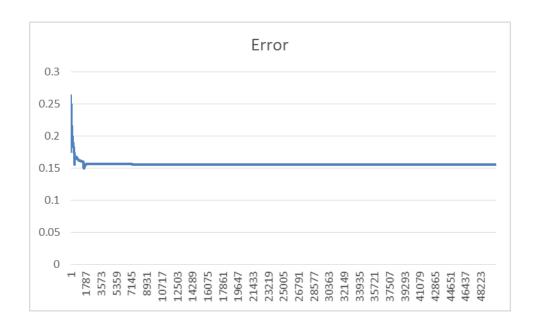
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• Session: 4 Error: 0.21854758031710447



• Session: 8 Error: 0.1552007761049501



• Session: 16 Error: 0.11019050733656549

