



Faculty of Computer Science 2006–2007 Seminar Series

An Introduction to Multiagent Systems and an Agent-based Neural Network Environment (ANNE)

By

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ITC317

Software agents are computational entities that are capable of autonomous action within an environment on behalf of its owner. Agents can operate independently or as part of a society of agents in a multiagent environment. As a paradigm for software engineering, software agents provide a level of abstraction to problem solving that permits intelligent and adaptive behaviour that can be distributed on a wide scale. Associated with the benefits of agents come the challenges of cooperation and communication between agents as well as questions of human trust in delegating tasks to systems programmed to act independently.

ANNE is an environment created to facilitate the creation of neural networks using software agents. Neural networks are created in ANNE using an XML description file. From this file a managing agent creates all of the perceptron nodes and necessary management nodes for the neural network. ANNE allows for neural networks to be synchronized or asynchronous and a specialized agent has been created to handle training backpropagation neural networks. ANNE illustrates some of the uses and features of multiagent systems and was created to fulfill the project requirement for CS6745 – Multiagent Systems.

This presentation provides an introduction to intelligent agents and multiagent systems via a synopsis of An Introduction to MultiAgent Systems by Michael Wooldridge and describes ANNE and the manner in which the properties of neural networks have been implemented using multiagent systems. Additional topics will include a brief overview of work done for CS6745 and potential applications of ANNE and opportunities for future work.

STUDENTS ARE ENCOURAGED TO ATTEND
