

## DEREK HARTER

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### Research Interests

My current research involves applying insights in nonlinear dynamical systems theory to the problems of cognition. My research explores the uses of aperiodic dynamics in forming perceptual, memory and goal structures for use in improved action selection mechanisms for autonomous agents. I have been particularly interested in the hierarchical formation of goal structures (valence systems) in biological and artificial organisms. My research has looked at how principles of self-organization in nonlinear dynamics are realized in neuronal groups, and especially how such principles are organized in the development of behavioral mechanisms. Areas of interest include:

- ◆ Complex adaptive systems
- ◆ Dynamical and embodied cognitive models
- ◆ Nonlinear brain dynamics
- ◆ Self-organizing systems
- ◆ Hierarchical and mesh dynamics
- ◆ Developmental and evolutionary systems

### Education

**Ph.D. in Computer Science**, University of Memphis, 2004

Concentration: Artificial Intelligence, Cognition and Complex Adaptive Systems

Dissertation: *Towards a Model of Basic Intentional Systems: Chaotic Dynamics for Perception and Action in Autonomous Adaptive Agents*

Advisors: Dr. Robert Kozma, Dr. Stanley P. Franklin, Dunavant Professor

**M.S. in Computer Science**, Johns Hopkins University, 1994

Concentration: Artificial Intelligence

Graduated with honors

**B.S. in Computer Science**, Purdue University, 1990

Graduated with distinction

### Professional Positions

**2004-Present Texas A&M University - Commerce**

**Assistant Professor**

Assistant Professor of Computer science. Duties include teaching, research and service.

**2001-2004 Self-Organizing Ontogenetic Development for Adaptive Systems (SODAS)**

NASA Intelligent Systems Grant NCC-2-1244, University of Memphis

### **Co-investigator**

Principal Investigator: Dr. Robert Kozma

Research scientist and coordinator of NASA intelligent systems grant. Coordinated interdisciplinary group of Psychology, Cognitive Science, Neuroscience and Artificial Intelligence researchers. Responsibilities include management of masters student's research projects, development of cluster computing systems, research and development of computational neurodynamical brain models, teaching, seminar organization and conference and journal publications.

### **2000-2001 Why2000: An Intelligent Tutoring System with Natural Language Dialog**

Office of Naval Research MURI Grant (N00014-00-1-0600), U. of Memphis

#### **Research Scientist, Consultant**

Principal Investigator: Dr. Arthur C. Graesser

Consulted on Why 2000: An Intelligent Tutoring System with Natural Language Dialog for the Office of Naval Research Multi-University Research Initiative. Adapted AutoTutor intelligent tutoring system technology to new knowledge domains. Trained programmers and masters students in AutoTutor technology.

### **1997-2000 AutoTutor: Simulating Tutors with Natural Dialog and Pedagogical Strategies**

National Science Foundation Grant (SBR 9720314), University of Memphis

#### **Research Associate, Principal Programmer**

Principal programmer National Science Foundation grant for the development of simulated tutors with natural language dialog and pedagogical tutoring strategies. Responsibilities included the design and development of simulated tutoring systems using statistical natural language processing techniques and animated talking head agents for student interaction. Organized and coordinated interdisciplinary team of scientists and programmers to translate theoretical positions on human tutoring into computer simulation. Developed and organized psychological experiments using AutoTutor. Helped streamline the collection and analysis of data. Produced conference and journal publications of scientific results.

### **1994–1997 MCImetro, Reston, VA**

#### **Senior Software Engineer, Research and Development**

Headed up national team of software engineers for the development of telecommunications provisioning system to provide private local phone service. Developed client/server provisioning application on NextStep platform using Objective-C and Oracle database. Led team to perform requirements, user analysis and system and database design using objected oriented analysis and design techniques. Coordinated and negotiated requirements with customers. Led graphical user interface design of system. Researched deployment of NextStep platform and objected oriented software methodologies for use in other MCI software projects.

### **1990–1994 Hughes Network Systems, Germantown, MD**

#### **Software Engineer**

Responsible for developing and implementing features for client/server network management software for satellite based telecommunications systems. Performed maintenance, testing, design and development tasks in VAX Pascal.

## Grants

- 2007-2008**     **Co-Investigator**, NSF 2007 SEGR  
*The Role of Sensorimotor and Perceptual Features in Perceiving and Enacting Actions.*  
1 year / \$70,000  
Principle Investigator: Dr. Shulan Lu  
Study of event and risk perception for the improvement of virtual training environments.
- 2006-2007**     **Principle Investigator**, Texas Higher Education Coordinating Board 2006 Advanced Research Program Competition  
*Investigating the Formation of Intentionality in Intelligent Systems*  
2 year / \$100,000  
Co-Investigator: Dr. Shulan Lu, Dr. Chiu-Che Stephen Tseng  
Proposed investigation of intentional behavior through modeling neurodynamics in robotic agents and studying eye tracking and other psychological experiments.
- 2006**            **Travel Grant**, NSF Carnegie Mellon University Embodiment Symposium, \$750
- 2006**            **Travel Grant**, NSF Large Scale Random Graph Workshop, \$1500
- 2005-Ongoing** **Principle Investigator**, L3 Communications Joint Industry/Academia Grant  
*Cognitive Models of Abstract Virtual Machines for Automatic Object Discovery, Identification, Location and Tracking*  
1 year & continuing / \$100,000  
Co-Investigator: Dr. Shulan Lu, Dr. Sam Saffer  
Investigate how can multi-modal sensory information be fused and correlated in a real-time and automatic manner to extract and deliver meaning to achieve mission critical objectives?
- 2005**            **Co-Investigator**, Texas A&M University Research Enhancement Grant  
A Computational and Empirical Investigation of Time in Perceiving, Remembering and Describing Events and Actions.  
Principal Investigator: Dr. Shulan Lu  
1 year / \$6,128
- 2004**            **Principle Investigator**, Texas A&M University - Commerce Mini-grant  
*Support Equipment for Embodied Robotics Laboratory*  
6 month / \$600 equipment for development of robotics lab for research and instructional purposes.
- 2001-2004**     **Co-Investigator**, NASA Research in Intelligent Systems, award \$1,000,000/3yr.  
*Models of Self-Organizing Ontogenetic Development for Autonomous Adaptive Systems (SODAS)*  
Principal Investigator: Dr. Robert Kozma  
Co-Investigators: Derek Harter, Dr. Stanley P. Franklin, Dr. Walter J. Freeman  
Grant for biologically inspired approaches to building autonomous robotic agents.
- 2001**            **Travel Grant**, Cognitive Science Society, \$500

- NSF travel grant awarded for presentation at 23<sup>rd</sup> Annual Conference of the Cognitive Science Society, Edinburgh, Scotland.
- 2001** **Travel Grant**, CNS Society, \$750  
Travel grant awarded for presentation at Fifth International Conference of Cognitive and Neural Systems (CNS2001), Boston, MA

## Honors and Awards

- 2004** National Academy of Sciences Research Associateship Awardee

## Publications

- Lu, S., **Harter, D.** and Graesser, A. (in press). An empirical and computational study of perceiving and remembering event temporal relations. *Cognitive Science*.
- Harter, D.**, Kozma, R., and Achunala, S. (2007). Dynamical aspects of Behavior generation under constraints. *Cognitive Neurodynamics*. 1(3): 213-223.
- Harter, D.**, and Kozma, R. (2006). Aperiodic dynamics and the self-organization of cognitive maps in autonomous agents. *International Journal of Intelligent Systems*. 21(9):955-971.
- Harter, D.**, and Kozma, R. (2005). Chaotic neurodynamics for autonomous agents. *IEEE Transactions on Neural Networks*. 16(3): 565-579.
- Harter, D.**, and Lu, S. (2005). A synthesis of many levels of constraints as a modern view of development. Commentary on Steels & Belpaeme paper entitled: "Coordinating perceptually grounded categories through language". *Behavioral and Brain Sciences*. 28(3): 498-499.
- Harter, D.**, and Kozma, R. (2001). Task environments for the dynamic development of behavior. *Lecture Notes in Computer Science*. 2074:300-306.
- Harter, D.**, Graesser, A. C. and Franklin, S. P. (2001). Bridging the gap: Dynamics as a unified view of cognition. *Behavioral and Brain Sciences*, 24(1):45-46.
- Graesser, A. C., VanLehn, K., Rosé, C., Jordan, P., **Harter, D.** (2001). Intelligent tutoring systems with conversational dialogue. *AI Magazine*. 22(4):39-51.
- Graesser, A.C., Person, N., **Harter, D.**, and the Tutoring Research Group (2000). Teaching tactics and dialog in AutoTutor. *International Journal of Artificial Intelligence in Education*. 12(3):257-279.
- Graesser, A. C., Wiemer-Hastings, P., Wiemer-Hastings, K., **Harter, D.**, Person, N., & the Tutoring Research Group. (2000). Using Latent Semantic Analysis to evaluate the contributions of students in AutoTutor. *Interactive Learning Environments*. 8(2):129-148.
- Wiemer-Hastings, P., Graesser, A.C., and **Harter, D.** (1998). The foundations and architecture of AutoTutor. *Lecture Notes in Computer Science*. 1452:334-340.

## Conference Proceedings

- Harter, D.** (2006). Time Constraints and the Evolution of Scale-Free Properties in Associative Networks. *Proceedings of the NSF International Workshop on Large Scale Random Graph Methods for Modeling Mesoscopic Behavior in Biological and Physical Systems*, Budapest, Hungary, Aug. 2006.
- Harter, D.**, and Kozma, R. (2006). Nonconvergent Dynamics and Cognitive Systems. *Proceedings of the 28<sup>th</sup> Annual Meeting of the Cognitive Science Society (CogSci 2006)*, Vancouver, BC Canada, Jul. 2006, pp. 1446-1452.
- Lu, S. and **Harter, D.** (2006). The role of overlap and end state in perceiving and remembering events. *Proceedings of the 28<sup>th</sup> Annual Meeting of the Cognitive Science Society (CogSci 2006)*, Vancouver, BC Canada, Jul. 2006, pp. 1729-1835.

- Harter, D.** (2006). Complex Systems Approaches to Emergent Goal Formation in Cognitive Agents. *Proceedings of the 2006 International Joint Conference on Neural Networks (IJCNN'06)*, Vancouver, BC Canada, Jul. 2006, pp. 1682-1688.
- Harter, D.** & Kozma, R. (2005). Iterative Model of Mesoscopic Neural Populations Displaying Aperiodic Dynamics. *Proceedings of the 2005 International Symposium on Nonlinear Theory and its Applications (NOLTA'05)*, Bruges, Belgium, Oct. 2005.
- Harter, D.** (2005). Evolving Neurodynamic Controllers for Autonomous Robots. *Proceedings of the 2005 International Joint Conference on Neural Networks (IJCNN'05)*, Montreal, Canada, Aug. 2005, pp. 137-142.
- Lu, S. and **Harter, D.** (2005). Representing Events Using Fuzzy Temporal Boundaries. *Proceedings of the 27<sup>th</sup> Annual Conference of the Cognitive Science Society*, Stresa, Italy, Jul. 2005, pp. 1343-1348.
- Harter, D.** (2005). Discrete Approximation of Continuous K-Set Population Model. *Proceedings of the Fourteenth Annual Computational Neuroscience Meeting (CNS\*2005)*, Madison, WI, Jul. 2005, pp. 80.
- Lu, S. and **Harter, D.** (2005). A Recurrent Neural Network Model of Event Temporal Representations. *Proceedings of the 51<sup>st</sup> Southwestern Psychological Association Annual Meeting*, Memphis, TN, Mar. 2005.
- Harter, D.**, and Kozma, R. (2004). Complex Systems Approaches to the Ontogenetic Development of Behavior. *Proceedings of the 3rd Annual Technical Conference of the American Institute of Aeronautics and Astronautics Conference (AIAA 2004)*, Chicago, IL, Sept. 2004, pp. 312.
- Harter, D.**, and Kozma, R. (2004). Biological Limbic Systems: A Bottom-Up Model for Deliberative Action. *Proceedings of the 26<sup>th</sup> Annual Meeting of the Cognitive Science Society (CogSci 2004)*, Chicago, IL, Aug. 2004, pp. 1569.
- Harter, D.**, and Kozma, R. (2004). Navigation and cognitive map formation using aperiodic neurodynamics. *Proceedings of the 8th International Conference on the Simulation of Adaptive Behavior (SAB'04)*, Los Angeles, CA, July 2004, pp. 450-455.
- Harter, D.**, and Kozma, R. (2004). Aperiodic dynamics and the self-organization of cognitive maps in autonomous agents. *Proceedings of the 17th International FLAIRS Conference (FLAIRS'04)*, Miami, FL, May 2004, pp. 424-429.
- Harter, D.**, and Kozma, R. (2004). Aperiodic dynamics for appetitive/aversive behavior in autonomous agents. *Proceedings of the 2004 IEEE International Conference on Robotics and Automation (ICRA'04)*, New Orleans, LA, April 2004, pp. 2147-2152.
- Harter, D.**, and Kozma, R. (2002). Simulating the principles of chaotic neurodynamics. In *Proceedings of the 6th World Multi-Conference on Systemics, Cybernetics and Informatics (SCI 2002)*, volume XIII, pages 598-603, Orlando, FL.
- Kozma, R., **Harter, D.** and Achunala, S. (2002). Action selection under constraints: Dynamic optimization of behavior in machines and humans. In *Proceedings of the IEEE/INNS/ENNS International Joint Conference on Neural Networks (IJCNN'02)*, pages 2574-2579, Washington, D.C.
- Harter, D.** (2001). Ontogenetic development of skills, strategies and goals for autonomously behaving systems. In *Proceedings of the 5th World Multi-Conference on Systemics, Cybernetics and Informatics (SCI 2001)*, pages 178-181, Orlando, FL.
- Harter, D.**, and Kozma, R. (2001). Models of ontogenetic development for autonomous adaptive systems. In *Proceedings of the 23<sup>rd</sup> Annual Conference of the Cognitive Science Society*, pages 405-410, Edinburgh, Scotland.
- Harter, D.**, and Kozma, R. (2001). Task environments for the dynamic development of behavior. In *Proceedings of the Intelligent Systems Design and Applications 2001 Workshop (ISDA 2001)*, pages 300-309, San Francisco, CA.

- Harter, D.**, and Kozma, R. (2001). Ontogenetic development of behavior for simple tasks. In *Proceedings of the Artificial Intelligence and Soft Computing Conference (ASC 2001)*, pages 401-407, Cancun, Mexico.
- Harter, D.**, Kozma, R. and Franklin S. P. (2001). Models of ontogenetic development: The dynamics of learning. In *Proceedings of the 2001 Learning Workshop*, page 37, Snowbird, UT.
- Harter, D.**, Kozma, R. and Franklin S. P. (2001). Ontogenetic development of skills, strategies and goals for autonomously behaving systems. In *Proceedings of the Fifth International Conference of Cognitive and Neural Systems (CNS2001)*, page 18, Boston, MA.
- Kozma, R., **Harter, D.** and Franklin S. P. (2001). Self-organizing ontogenetic development for autonomous adaptive systems (SODAS). In *Proceedings of the IEEE/INNS/ENNS International Joint Conference on Neural Networks (IJCNN'01)*, pages 633-637, Washington, D.C.
- Graesser, A.C., Person, N., **Harter, D.**, and the Tutoring Research Group (2000). Teaching tactics in AutoTutor. In *Proceedings of the Workshop on Tutorial Dialogue at the Intelligent Tutoring Systems 2000 Conference*. pages 49-57, University of Quebec, Canada.
- Marineau, J., Wiemer-Hastings, P., **Harter, D.**, Olde, B., Chipman, P., Karnavat, A., Pomeroy, V., Graesser, A.C., and the Tutoring Research Group (2000). Classification of speech acts in tutorial dialog. In *Proceedings of the Workshop on Tutorial Dialogue at the Intelligent Tutoring Systems 2000 Conference*.
- Wiemer-Hastings, P., Graesser, A. C., **Harter, D.**, & the Tutoring Research Group (1998). The foundations and architecture of AutoTutor. In *Proceedings of the 4th International Conference on Intelligent Tutoring Systems*, pages 334-343, Berlin Springer-Verlag.

## Conference Presentations

- Harter, D.** (2006). Time Constraints and the Evolution of Scale-Free Properties in Associative Networks. Paper presented at the 1<sup>st</sup> NSF International Workshop on Large Scale Random Graph Methods for Modeling Mesoscopic Behavior in Biological and Physical Systems, Budapest, Hungary, Aug. 2006.
- Harter, D.**, and Kozma, R. (2006). Nonconvergent Dynamics and Cognitive Systems. Poster presented at the 28<sup>th</sup> Annual Meeting of the Cognitive Science Society (CogSci 2006), Vancouver, BC Canada, Jul. 2006.
- Lu, S. and **Harter, D.** (2006). The role of overlap and end state in perceiving and remembering events. Poster presented at the 28<sup>th</sup> Annual Meeting of the Cognitive Science Society (CogSci 2006), Vancouver, BC Canada, Jul. 2006.
- Harter, D.** (2006). Complex Systems Approaches to Emergent Goal Formation in Cognitive Agents. Paper presented at the 2006 International Joint Conference on Neural Networks (IJCNN'06), Vancouver, BC Canada, Jul. 2006.
- Harter, D.** (2005). Evolving Neurodynamic Controllers for Autonomous Robots. Paper presented at the 2005 International Joint Conference on Neural Networks (IJCNN'05), Montreal, Canada, Aug. 2005.
- Harter, D.** (2005). Applications of IDS: Mead's Challenge, What is Going on Here?. Invited talk at the 2005 International Joint Conference on Neural Networks (IJCNN'05) Workshop on Intentional Dynamical Systems, Montreal, Canada, Aug. 2005.
- Lu, S. and **Harter, D.** (2005). Representing Events Using Fuzzy Temporal Boundaries. Poster presented at the 27<sup>th</sup> Annual Conference of the Cognitive Science Society, Stresa, Italy, Jul. 2005.
- Harter, D.** (2005). Discrete Approximation of Continuous K-Set Population Model. Poster presented at the Fourteenth Annual Computational Neuroscience Meeting (CNS\*2005), Madison, WI, Jul. 2005.

- Lu, S. and **Harter, D.** (2005). A Recurrent Neural Network Model of Event Temporal Representations. Poster presented at the 51<sup>st</sup> Southwestern Psychological Association Annual Meeting, Memphis, TN, Mar. 2005.
- Harter, D.**, and Kozma, R. (2004). Complex Systems Approaches to the Ontogenetic Development of Behavior. Paper presented at 1<sup>st</sup> Intelligent Systems Technical Conference of the American Institute of Aeronautics and Astronautics (AIAA'04), Chicago, IL, September 2004.
- Harter, D.**, and Kozma, R. and Freeman, W.J. (2004). Biological Limbic Systems: A Bottom-Up Model for Deliberative Action. Poster presented at the 26<sup>th</sup> Annual Meeting of the Cognitive Science Society (CogSci 2004), Chicago, IL, August 2004.
- Harter, D.**, and Kozma, R. (2004). Navigation and Cognitive Map Formation Using Aperiodic Neurodynamics. Paper presented at From Animals to Animats 8: The 8<sup>th</sup> International Conference on the Simulation of Adaptive Behavior (SAB '04), Los Angeles, CA, July 2004.
- Harter, D.**, and Kozma, R. (2004). Aperiodic dynamics and the self-organization of cognitive maps in autonomous agents. Paper presented at the 17th International FLAIRS Conference (FLAIRS'04), Miami, FL, May 2004.
- Harter, D.**, and Kozma, R. (2004). Aperiodic Dynamics for Appetitive/Aversive Behavior in Autonomous Agents. Paper presented at the 2004 IEEE International Conference on Robotics and Automation (ICRA 2004), New Orleans, LA, April 2004.
- Harter, D.** (2004). Formation of perceptual patterns in autonomous agents using a discretized K-III model. Paper presented at the 2004 Intentional Dynamic Systems Conference (IDS'04), Memphis, TN, April 2004.
- Harter, D.**, and Kozma, R. (2002). Simulating the principles of chaotic neurodynamics. Paper presented at the 6th World Multi-Conference on Systemics, Cybernetics and Informatics (SCI 2002), Orlando, FL.
- Harter, D.** (2002). Computational neurodynamics at the University of Memphis. Paper presented at the 4<sup>th</sup> Annual Memphis Area Engineering and Science Conference (MAESC 2002), Memphis, TN.
- Harter, D.** (2002). Chaotic neurodynamics for behaviors in autonomous agents. Poster presented at the 2002 Symposia on the Dynamics of Memory, Perception and Consciousness (DPCM 2002), Memphis, TN.
- Harter, D.** (2001). Ontogenetic development of skills, strategies and goals for autonomously behaving systems. Paper presented at the 5th World Multi-Conference on Systemics, Cybernetics and Informatics (SCI 2001), Orlando, FL.
- Harter, D.**, and Kozma, R. (2001). Models of ontogenetic development for autonomous adaptive systems. Poster presented at the 23<sup>rd</sup> Annual Conference of the Cognitive Science Society, Edinburgh, Scotland.
- Harter, D.**, and Kozma, R. (2001). Ontogenetic development of behavior for simple tasks. Paper presented at the Artificial Intelligence and Soft Computing Conference (ASC 2001), Cancun, Mexico.
- Harter, D.**, Kozma, R. and Franklin S. P. (2001). Models of ontogenetic development: The dynamics of learning. Poster presented at the 2001 Learning Workshop, Snowbird, UT.
- Harter, D.**, Kozma, R. and Franklin S. P. (2001). Ontogenetic development of skills, strategies and goals for autonomously behaving systems. Poster presented at the Fifth International Conference of Cognitive and Neural Systems (CNS2001), Boston, MA.
- Graesser, A.C., Person, N., **Harter, D.**, & the Tutoring Research Group (2000, June). Teaching tactics in AutoTutor. Paper presented at the Workshop on Tutorial Dialogue at the Intelligent Tutoring Systems 2000 Conference, Montreal, Canada.
- Marineau, J., Wiemer-Hastings, P., **Harter, D.**, Olde, B., Chipman, P., Karnavat, A., Pomeroy, V., Graesser, A.C., and the Tutoring Research Group (2000, June). Classification of speech

acts in tutorial dialog. Paper presented at the Workshop on Tutorial Dialogue at the Intelligent Tutoring Systems 2000 Conference, Montreal, Canada.

Person, N., Graesser, A.C., **Harter, D.**, Mathews, E., and the Tutoring Research Group (2000, November). Dialog move generation and conversation management in AutoTutor. Paper presented at the AAAI Fall Symposium 2000 on Building Dialogue Systems for Tutorial Applications, Cape Code, MA.

Person, N., Graesser, A.C., **Harter, D.**, and the Tutoring Research Group (2000, July). The dialog advancer network: A mechanism for improving AutoTutors conversational skills. Paper presented at the Meetings of the Society for Text and Discourse, Lyon, France.

Rajan, S., **Harter, D.**, Graesser, A.C., and the Tutoring Research Group (2000, July). Back channel feedback in human and intelligent tutoring systems. Poster presented at the Meetings of the Society for Text and Discourse, Lyon, France.

Graesser, A. C., Wiemer-Hastings, K., Wiemer-Hastings, P., **Harter, D.**, Person, N., and Kreuz, R. (1999). Latent semantic analysis can reliably evaluate student contributions in AutoTutor. Paper presented at the 40th Annual Meeting of the Psychonomic Society, Los Angeles, California.

Graesser, A.C., Franklin, S. P., and the Tutoring Research Group (1998, July). The goals and design of AutoTutor. Symposium presented at the 8<sup>th</sup> Annual Meeting of the Society for Text and Discourse, Madison, Wisconsin.

## Teaching Experience

|             |            |              |    |      |   |
|-------------|------------|--------------|----|------|---|
| Spring 2008 | Instructor | CSci 553     | G  | TAMU | Network Programming III                               |
| Spring 2008 | Instructor | CSci 414     | U  | TAMU | UNIX Software Development                             |
| Spring 2008 | Instructor | CSci 531     | G  | TAMU | Java Programming                                      |
| Fall 2007   | Instructor | CSci 538     | G  | TAMU | Artificial Intelligence                               |
| Fall 2007   | Instructor | CSci 531     | G  | TAMU | Java Programming                                      |
| Spring 2007 | Instructor | CSci 553     | G  | TAMU | Network Programming III                               |
| Fall 2006   | Instructor | CSci 531     | G  | TAMU | Java Programming                                      |
| Sum 2006    | Instructor | CSci 152     | U  | TAMU | Programming Fundamentals II                           |
| Spring 2006 | Instructor | CSci 589     | U  | TAMU | Projects in Artificial Intelligence                   |
| Spring 2006 | Instructor | CSci 553     | G  | TAMU | Unix Network Programming                              |
| Fall 2005   | Instructor | CSci 152     | U  | TAMU | Programming II, Intermediate C++ and Intro to OO Prog |
| Fall 2005   | Instructor | CSci 497     | U  | TAMU | Introduction to Behavior Based Robotics               |
| Sum 2005    | Instructor | CSci 270     | U  | TAMU | Introduction to Data Structures                       |
| Spring 2005 | Instructor | CSci 430/530 | GU | TAMU | Operating Systems: Design and Implementation          |
| Spring 2005 | Instructor | CSci 152     | U  | TAMU | Programming II, Intermediate C++ and Intro to OO Prog |
| Fall 2004   | Instructor | CSci 152     | U  | TAMU | Programming II, Intermediate C++ and Intro to OO Prog |
| Fall 2004   | Instructor | Csci 270     | U  | TAMU | Introduction to Data Structures                       |
| Sum 2004    | Instructor | COMP 3160    | U  | UofM | Advanced Data Structures                              |
| Spring 2004 | Instructor | COMP 4/6730  | GU | UofM | Expert Systems and Prolog Programming                 |
| Spring 2004 | TA         | COMP 6861    | G  | UofM | Neurodynamics   |
| Fall 2003   | TA         | COMP 4720    | U  | UofM | Introduction to Artificial                            |

|           |                      |                     |    |      |  |
|-----------|----------------------|---------------------|----|------|--|
| Fall 2001 | Instructor           | COMP/PSYC<br>8514   | G  | UofM | Intelligence<br>Dynamics of Memory and<br>Cognition: How brains make up<br>their minds |
| Fall 2000 | Instructor           | COMP/PSYC<br>6/8514 | GU | UofM | Computational Linguistics  |
| Fall 1999 | Seminar<br>Organizer | COMP/PSYC<br>8514   | G  | UofM | Embodied and Dynamical Models<br>of Cognition  |
| 1993-1994 | Instructor           |                     |    | HNS  | Object Oriented Software<br>Development  |

U = Undergraduate / G = Graduate  
TAMU = Texas A&M University – Commerce  
UofM = University of Memphis  
HNS = Hughes Network Systems

## Editorial Work

|                     |   |
|---------------------|---|
| <b>2007</b>         | Reviewer for International Neural Networks Society (INNS) Newsletter                                |
| <b>2007</b>         | Reviewer for Cognitive Science Conference ( <i>CogSci07</i> )                                       |
| <b>2006</b>         | Reviewer for <i>International Joint Conference on Neural Networks (IJCNN'06)</i>                    |
| <b>2006</b>         | Reviewer for Cognitive Science Conference ( <i>CogSci06</i> )                                       |
| <b>2005</b>         | Reviewer for F. Carrano (2005) <i>Data Structures and Abstractions in Java 2/E</i><br>Prentice Hall |
| <b>2005</b>         | Reviewer for <i>International Joint Conference on Neural Networks (IJCNN'05)</i>                    |
| <b>2005</b>         | Reviewer for <i>International Conference on Intelligent Robots and Systems (IROS'05)</i>            |
| <b>2004</b>         | Reviewer for <i>International Journal of Intelligent Systems (IJIS)</i>                             |
| <b>2001–current</b> | Ad hoc reviewer to <i>Transactions in Neural Network</i>  |
| <b>2001</b>         | Reviewer for <i>Intelligent Systems Design and Applications (ISDA 2001)</i><br>conference.          |

## Professional Service

|             |   |
|-------------|---|
| <b>2006</b> | Co-Organizing 2006 Northeast Texas INNS/MIND Workshop on Goal-Directed Neural Systems   |
| <b>2006</b> | Co-Organizer Texas A&M University – Commerce 2006 Brain, Computation and Mind Brown Bag Seminars  |
| <b>2004</b> | Invited Speaker, “Computing, Life Sciences and Cognition: Interdisciplinary Approaches to Understanding Intelligence”, Texas A&M University – Commerce, Sigma XI Society semi-annual meeting, December 2, 2004.   |
| <b>2004</b> | Presenter, “Salamanders Don’t Play Chess: computation, sciences and careers for the 21 <sup>st</sup> century”, Texas A&M University – Commerce, Mesquite Metroplex Center, Mentoring Workshop, November 13, 2004. |
| <b>2004</b> | Organizing Chair, 2004 Symposia on Intentional Dynamic Systems, University of Memphis.  |
| <b>2001</b> | Organizer, 2001 Symposia on the Dynamics of Memory, Perception and Consciousness, University of Memphis.  |

## Professional Memberships

American Institute of Aeronautics and Astronautics (AIAA), since 2004  
Association of Computing Machinery (ACM), since 1994  
American Association of Artificial Intelligence (AAAI), since 1998  
Cognitive Science Society, since 1998  
Institute of Electrical and Electronics Engineers (IEEE), since 2003  
Society of Adaptive Behavior, since 1999

## References

Dr. Sam Saffer, Chair  
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