W. Scott Neal Reilly

School of Computer Science
Carnegie Mellon University
5000 Forbes Avenue
Pittsburgh, PA 15213-3891
(412) 268-6767
wsr@cs.cmu.edu
http://www.cs.cmu.edu/~wsr/

Objective

A full-time academic or industrial position that allows me to research and build personality-rich autonomous agents with emotional and social capabilities.

Education

Ph.D. Computer Science, Carnegie Mellon University, May 1996

Thesis title:	Believable Social and Emotional Agents
Thesis summary:	I have created tools and methodologies that allow artists to create emotional and social agents to be used as characters in interactive drama. My approach has consisted mainly of creating a broad agent architecture with minimal amounts of knowledge representation.
Thesis committee:	Joseph Bates (chair), Jaime Carbonell, Reid Simmons, and Aaron Sloman (University of Birmingham, England)

M.S. Computer Science, Carnegie Mellon University, August 1993

B.S. Computer Science, Duke University, May 1989
Graduated *Summa Cum Laude*
Also completed degree requirements for B.A. Mathematics and B.A. Philosophy

Work Experience

June 1996-Present
Postdoctoral Fellow, School of Computer Science, Carnegie Mellon University, Pittsburgh, PA. I am currently exploring potential research directions for interactive drama.

September 1989-May 1996
Graduate Research Assistant, School of Computer Science, Carnegie Mellon University, Pittsburgh, PA. As a member of the Oz group, I designed and built systems that allow artists to create characters for interactive drama that display emotions and social behaviors. I also worked on sensing and memory systems for such agents. As a member of the Prodigy group, I designed and built a system to incorporate deliberative planning into agents for real-time, dynamic environments.

September 1991-December 1991
Graduate Teaching Assistant, Software Engineering Institute, Carnegie Mellon University, Pittsburgh, PA. Created and graded homework assignments, tutored students, and lectured for graduate class in "Advanced System Principles." This class covered topics such as distributed systems, object-oriented programming, and computer security.

January 1991-May 1991
Graduate Teaching Assistant, School of Computer Science, Carnegie Mellon University, Pitts-

burgh, PA. Created homeworks and tutored students in "Fundamental Structures of Computer Science." Also lead review sections and gave weekly recitation lectures.

May 1989-August 1989
Intern, Artificial Intelligence Group, Andersen Consulting, Chicago, IL. Worked with commercial expert system development tools, designed user interfaces to existing expert systems, and provided help-desk support to the company's field consultants.

January 1988-May 1989
Tutor, Peer Tutoring Office, Duke University, Durham, NC. Tutored undergraduate students in computer science.

September 1986-December 1986
Grader, Computer Science Department, Duke University, Durham, NC. Graded homework assignments for introductory computer science class.

Awards

Dean's List with Distinction, Duke University, 1985-1989
Hertz Foundation Honorable Mention, 1990

Honorary and Professional Societies

Phi Beta Kappa honors fraternity
Phi Eta Sigma honors fraternity
American Association for Artificial Intelligence (AAAI)
Association for Computing Machinery (ACM)
ACM Special Interest Group on Artificial Intelligence (SIGART)

Publications

Joseph Bates, A. Bryan Loyall, and W. Scott Reilly, *Broad Agents,* Proceedings of the AAAI Spring Symposium on Integrated Intelligent Architectures, Stanford University, March 1991. In SIGART Bulletin, Volume 2, Number 4, August 1992.

Joseph Bates, A. Bryan Loyall, and W. Scott Reilly, *Integrating Reactivity, Goals, and Emotion in a Broad Agent*, Proceedings of the Fourteenth Annual Conference of the Cognitive Science Society, Bloomington, Indiana, July 1992.

Joseph Bates, A. Bryan Loyall, and W. Scott Reilly, *An Architecture for Action, Emotion, and Social Behavior,* Proceedings of the Fourth European Workshop on Modeling Autonomous Agents in a Multi-Agent World, S. Martino al Cimino, Italy, July 1992.

Other Papers and Reports

W. Scott Neal Reilly, *Believable Social and Emotional Agents*, Ph.D. Thesis, Technical Report CMU-CS-96-138, School of Computer Science, Carnegie Mellon University, Pittsburgh, PA. May 1996.

W. Scott Reilly and Joseph Bates, *Natural Negotiation for Believable Agents*, Technical Report CMU-CS-95-164, School of Computer Science, Carnegie Mellon University, Pittsburgh, PA, June 1995.

W. Scott Reilly, *The Art of Creating Emotional and Robust Interactive Characters*, Working notes of the AAAI Spring Symposium on Interactive Story Systems, Stanford University, March 1995.

W. Scott Reilly, *The Art of Creating Emotional and Robust Interactive Characters*, Working notes of the IJCAI Workshop on Entertainment and AI/ALife, Montreal, Canada, August 1995.

W. Scott Reilly, *Building Emotional Characters for Interactive Drama*, Student Abstract, Proceedings of the Twelfth National Conference on Artificial Intelligence, Seattle, WA, August 1994.

W. Scott Reilly, *Synergistic Capabilites in Believable Agents*,. Working Notes of the AAAI Spring Symposium on Believable Agents, Stanford University, March 1994.

W. Scott Reilly and Joseph Bates, *Emotion as Part of a Broad Agent Architecture*, Working Notes of the Workshop on Architectures Underlying Motivation and Emotion, Birmingham, England, August 1993.

Jim Blythe and W. Scott Reilly, *Integrating Reactive and Deliberative Planning for Agents*, Working Notes for the AAAI-93 Fall Symposium on Instantiating Real World Robots, Raleigh, NC, October 1993.

Jaime G. Carbonell, Jim Blythe, Oren Etzioni, Yolanda Gil, Robert Joseph, Dan Kahn, Craig Knoblock, Steven Minton, Alicia Perez, Scott Reilly, Manuela Veloso, Xuemei Wang, *Prodigy 4.0: The Manual and Tutorial*, Technical Report CMU-CS-92-150, School of Computer Science, Carnegie Mellon University, Pittsburgh, PA, June 1992.

W. Scott Reilly and Joseph Bates, *Building Emotional Agents,* Technical Report CMU-CS-92-143, School of Computer Science, Carnegie Mellon University, Pittsburgh, PA, May 1992.

W. Scott Reilly, *Sensory Routines User's Manual*, Oz Project Internal Report, Carnegie Mellon University, Pittsburgh, PA, October 1991.

W. Scott Reilly, *Integrated Sense Model User's Manual*, Oz Project Internal Report, Carnegie Mellon University, Pittsburgh, PA, October 1991.

Talks and Other Presentations

"Believable Social and Emotional Agents," Thesis defense, Carnegie Mellon University, Pittsburgh, PA. March 1996.

"Emotional and Social Agents for Interactive Art and Entertainment," Workshop on AI in Art and Entertainment, 1995 International AI Conference on Creative Society, Nagoya, Japan, November 1995. Invited talk.

"Emotional and Social Agents for Interactive Art and Entertainment and Beyond ...," Fujitsu Laboratories, Akashi, Japan, November 1995. Invited talk.

"Emotional and Social Agents for Interactive Art and Entertainment and Beyond ...," Justsystem Inc., Tokushima, Japan, November 1995. Invited talk.

"What are Believable Agents, Really?" IJCAI-95 Workshop on Entertainment and AI/ALife, Montreal, Canada, August 1995.

"Believable Social Characters," Poster Presentation, AAAI Spring Symposium on Interactive Story Systems, Stanford, CA, March 1995.

"Building Emotional Characters for Interactive Drama," Poster Presentation, AAAI-94, Seattle, WA, August 1994.

"Social and Emotional Agents," Thesis proposal, Carnegie Mellon University, Pittsburgh, PA, December 1993.

"Emotion as Part of a Broad Agent Architecture," Workshop on Architectures Underlying Motivation and Emotion, Birmingham, England, August 1993.

"Computer Simulations of Emotional Agents," Carnegie Mellon University, Pittsburgh, PA, April 1993.

"Integrating Reactivity, Goals, and Emotion in a Broad Agent", Poster Presentation, CogSci-92, Bloomington, IN, July 1992. With Joseph Bates.

Public Presentations of Artistic Works

Edge of Intention, AAAI-92 Arts Exhibition, San Jose, CA, July 1992. This is an animated, interactive simulated environment. The environment is inhabited by three "Woggles," each of which displays emotions, social behaviors, goal-directed behavior, reactivity to the environment, and a distinct personality. I was 1 of 13 researchers and artists to design and build this system. My primary task was to make the agents display personality through their emotions and social relationships.

The *Edge of Intention* has also been shown at the Hewlett Gallery of Carnegie Mellon University in January 1993. It is a permanent exhibit of the Computer Museum in Boston, MA. It was displayed at Machine Culture, the SIGGRAPH art show, in Anaheim, CA in August 1993. It won an Honorable Mention at Ars Electronica 1993 in Linz, Austria (placing it in the top 4% of the 1150 works submitted from 35 countries).

References

Joseph Bates
Principal Research Scientist
School of Computer Science
Carnegie Mellon Univeristy
5000 Forbes Avenue
Pittsburgh, PA 15213
(412) 268-3725
jbates@cs.cmu.edu

Jaime Carbonell
Professor of Computer Science
School of Computer Science
Carnegie Mellon University
5000 Forbes Avenue
Pittsburgh, PA 15213
(412) 268-3064
jgc@cs.cmu.edu

Reid Simmons
Research Scientist
School of Computer Science
Carnegie Mellon University
5000 Forbes Avenue
Pittsburgh, PA 15213
(412) 268-2621
reids@cs.cmu.ed

Aaron Sloman
Professor of Artificial Intelligence
and Cognitive Science
School of Computer Science
The University of Birmingham
Birmingham, B15 2TT
England
a.sloman@cs.bham.ac.uk

Other Information

I am a U.S. citizen.