

Statement of Research Interests for Dario Nardi

I consider myself a cognitive scientist, and if there is a single theme to my research, it is the modeling and simulation of complex, interactive systems, particularly intelligent social agents.

I believe research should draw on multiple approaches. For example, understanding socially embedded intelligence has drawn me to explore computer models, live simulations of people in action, frameworks about social behavior and individual personality, programming approaches, and theoretical principles to AI. A model is a generalization and the computer does not necessarily present itself in a form readily available to capture human-like behaviors, so a process of research, experimentation, development, testing and such strongly characterizes what I do.

Many of my research and popular publications address learning styles, personality, cognitive development, and intelligence. I am interested in describing and understanding the nitty-gritty moment to moment cognitive processes people experience as they engage in various intelligent activities. How does one get dressed in the morning? How is a story told or problem represented in the mind? While human beings share much in common, I continue to be amazed by the variations of motivation, perception, activity, learning and so on people evince. One aspect of my research philosophy is that if we desire to capture these functions in a machine, we might want to increase our understanding of these functions in ourselves.

Internet based applications, Internet programming, and modeling of agents in 3D environments has also captured my attention. This interest first began when I observed the enthusiasm of students for programming for the Net and my experience of consulting for ImageLine Media at Raleigh Studios in Hollywood. As I have developed Web-based applications, such as an on-line programming editor and interpreter, I have begun to discover questions and challenges that face this evolving subject area.

Perhaps my most exciting research is the on-going development of a socially aware artificial intelligence. This experiment has involved:

- the development of a programming language
- investment in observing and modeling human social (mainly linguistic) interaction
- an on-going testing and feedback process with people
- a broad exploration of techniques in AI

Examples of “social situated action” include understanding, recalling, using, and passing along to various program users socially relevant information, from one’s name and profession to one’s opinions on various topics or one’s style of social interaction. This experiment is a search to better capture human behavior in machines, and to perhaps more abstractly to explore the question of why AI has progressed, or not progressed, as it has. Because I have chosen to reach for something more uncertain and complex, I have withheld presenting my ideas until recently, with a first paper accepted for the Lake Arrowhead Conference on Computational and Social Science and Social Complexity, in May 2002. Continued publication is planned.

Finally, I believe popular works supplement research so long as they are based on that research and present ideas rigorously - they have “meat on the bone.” Every book or booklet I have been involved with passes through a rigorous process involving interviews and feedback with volunteer subjects and other experts. I have found that forcing oneself to articulate complex ideas to a general educated audience is not unlike forcing oneself to transform one’s ideas into working computer code. There is also value and perhaps a kind of responsibility for those of us in an academic role to share more-developed research and ideas with the educated public.

I suspect that a statement of research interests is most naturally interpreted as a linear statement of focal interests, goals, or projects. But creative research is an on-going fluid process. There are no clear beginnings, ends, or even middles. I have only recently graduated and look forward quite eagerly to many years of research, with the understanding that a balance is needed between following one’s interests and getting feedback from peer’s on one’s work.