PANEL

"Intelligent Agents in Distributed Systems"

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Many researchers and developers are turning to intelligent agents as a solution to the problems of cooperative work environments and global information systems. The basic idea of agent research is to develop software systems which engage and help all types of end users. Proposals and architectures abound. Agents support flexible human-computer interaction. They facilitate the communication and cooperation of users. Agents search large networks for needed information. They collaborate with users in filtering the resulting information deluge. Agents meld heterogeneous applications into a single, more powerful application that better meets user needs. Agents provide a simpler way to evolve systems to meet the goals of the global information age.

This panel provides an opportunity for interaction between the ICDCS community and the intelligent agent community. Its goal is to identify the distributed systems infrastructure that is necessary for supporting agent architectures. Specifically, this panel addresses many of the questions raised by agent architectures in the context of distributed systems: Just what is an agent? What should agents do? Is there a universal agent structure that can easily be tailored to user needs? Are agents mobile? Is mobility just sending the program to the data or is it more than this? How do multiple agents interact? Are agents cooperating or adversarial? What is the language of agent interaction? How can agent architectures be made secure? Or can they?

With the help of the audience, the panel will identify research and engineering problems in traditional areas, such as network services and management, protocols, security and distributed database systems, that must be solved to support agent architectures. Innovations in distributed systems such as high-speed networks and mobile computing environments offer opportunities for new applications in areas such as digital libraries, electronic market places, and collaborative environments. We will examine the implications of these technologies for the emerging agent architectures.