Multiagent Software Engineering
Definition (Software Agent)

- A piece of software which acts to reach a goal possibly with an initial knowledge and no direct supervision.
Agent components

• Sensors
• Actuators
• Knowledge Base
Definition (Multiagent)

• A multi-agent system (MAS) is a system composed of several software agents, collectively capable of reaching goals that are difficult to achieve by an individual agent or monolithic system.
Multiagent Systems

- Distributed intelligent software agents
- Do not have the capabilities to achieve an objective alone.
Agents Interact

- Cooperative: Share a common goal
- Selfish: Pursue their own interest
Agents vs. SE Process

- Design of Adaptive Multiagent Systems
- Adaptive software requirements
- Adaptive design components
- Multiagent systems can reorganize
Multiagent Research

- Interaction Protocols
- Communication Languages
- Organization/Reorganization Algorithms
Methodology (MaSE)

- Multiagent Systems Engineering: General purpose multiagent systems
- Weakness: Fixed organization of agents
Methodology (OMACS)

- Organization-based
- Agents adapt with their environment
- Example: A new goal enters the system, but no need to redesign everything.
Current Research

- AAAI
- MACR Lab (K–State): Dr. Deloach
Presentation Webpage

- http://people.cis.ksu.edu/~halmohri/mar/