

# **CS344M**

# **Autonomous Multiagent Systems**

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# Good Afternoon, Colleagues

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Are there any questions?

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- NYT Rodney Brooks article

# Some Definitions

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# Multiagent Systems

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- Study, behavior, construction of **possibly preexisting** autonomous agents that interact with each other.
  - incomplete information for agents
  - no global control
  - decentralized data
  - asynchronous computation

# Why Multiagent Systems?

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(7)

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- Some domains require it. (Hospital scheduling)
- Interoperation of legacy systems
- Parallelism.
- Robustness.
- Scalability
- Simpler programming.
- “Intelligence is deeply and inevitably coupled with interaction.” – *Gerhard Weiss*



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- **Community of Experts:** specialists, mutual adjustment
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- **Scientific community:** full solutions (perhaps with varying information) combined



# Discussion

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When would you use market vs. hierarchy?

# Issues and Challenges

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- Engineering

# Dimensions and issues

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- cooperative vs. competitive
- communication
- trust
- recursive modeling
- coalitions
- game theory



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# Pursuit Activity

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**Group 1:** homogeneous, non-communicating

**Group 2:** homogeneous, communicating

**Group 3:** heterogeneous, non-communicating

**Group 4:** heterogeneous, communicating