CS344M Autonomous Multiagent Systems

Todd Hester

Department of Computer Science The University of Texas at Austin

Good Afternoon, Colleagues

Are there any questions?





• Project proposal questions?





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 - Hand in 2 hard copies, mark 2D/3D





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 - Food gathering
 - Burial
 - Nest building
 - Reproduction



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Model the ant, not the colony



• Complex system behavior from many simple agents



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- Complexity comes from interactions, the environment



Agents tied to environment

• Agent = <State, Input, Output, Process>



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Note: supports hierarchical agents



Examples from Nature

- Ants: path planning
- Ants: brood sorting
- Termites: nest building
- Wasps: task differentiation
- Birds and Fish: flocking
- Wolves: surrounding prey







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- Provide an "entropy leak"

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- Experiments

Now multiple robots make a difference



Trail-Laying Robots :

- An application to **real robots**
- Trails marked with a pen
- Also use simulations (video)



Real Robot Applications

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Task Allocation :

- Also on real robots
- How many is too many?



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Hybrid systems?



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- Each item has a key and a rank
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