CS344M Autonomous Multiagent Systems

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Good Afternoon, Colleagues

Are there any questions?



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Patrick MacAlpine



• Project proposal questions?





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





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 - Paper on pair programming





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- Kim Houck RPE, Wednesday at 1, GDC 4.816
 - "Evolving Structure in Deep Neural Networks"



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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



- Complex system behavior from many simple agents
- Complexity comes from interactions, the environment



Agents tied to environment

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



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Note: supports hierarchical agents



• Ants: path planning



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- Ants: brood sorting



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- Termites: nest building
- Wasps: task differentiation
- Birds and Fish: flocking
- Wolves: surrounding prey



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- Simple agents (small, forgetful, local)



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- Provide an "entropy leak"

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 - Other metrics
- 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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TERMES :

- Termite robots
- (video)

