

# **CS344M**

# **Autonomous Multiagent Systems**

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# Good Afternoon, Colleagues

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Are there any questions?

# Logistics

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- All readings up

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- More reflections on peer reviews?

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- All readings up
- More reflections on peer reviews?
- Final projects due in 2 weeks!

# Reading Overview: Vidal and Durfee

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## Recursive Modeling Method

- What should I do?

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# Reading Overview: Vidal and Durfee

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## Recursive Modeling Method

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- What should I do given what I think you'll do?
- What should I think you'll do given what I think you think I'll do?
- etc.

# Prediction Method

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  - Includes physical *and* mental states

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  - Could be computationally expensive
- Trade-off between time and performance gain
- When is it worthwhile to model deeper?

# Lessons

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- Modeling can help
- There is a lot of useless information in recursive models
- Approximations (limited rationality) can be useful

# Learning Teammate Models for Ad Hoc Teamwork

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- Forced to work with a group of unknown teammates

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- Slides...

# Where do Models Come From?

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Observation:

- RMM: Use existing model
- Barrett: Learn model from prior experiences

**What if we can't build a full model in advance?**

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Observation:

- RMM: Use existing model
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**What if we can't build a full model in advance?**

- How can we build a predictive model on-line incrementally?

# Play me at RoShamBo

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- Scissors beats paper
- Paper beats rock

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- What is your strategy before modeling me?

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  - Am I modeling you?

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# Discussion

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- Applications of ad hoc teamwork?
- What if there was communication?
- How would you build an ad hoc teammate?