Good Afternoon, Colleagues

Are there any questions?
Logistics

- All readings up
Logistics

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- Final projects due in 2 weeks!
Recursive Modeling Method

- What should I do?
Recursive Modeling Method

- What should I do?
- What should I do given what I think you’ll do?
Recursive Modeling Method

- What should I do?
- 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?
Recursive Modeling Method

- What should I do?
- 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

- Rely on communication
Prediction Method

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  - What to say? What to trust?
Prediction Method

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  - What to say? What to trust?

- Watch for patterns of others
Prediction Method

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- Watch for patterns of others
  - Might have incorrect expectations, especially if environment changes
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- Use deeper models
  - Includes physical and mental states
Prediction Method

- Rely on communication
  - What to say? What to trust?

- Watch for patterns of others
  - Might have incorrect expectations, especially if environment changes

- Use deeper models
  - Includes physical and mental states
  - Could be computationally expensive
Types of models

Example: pursuit task

No-information: Random choice
Types of models

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**No-information:** Random choice

**Sub-intentional:** Not rational
Types of models

Example: pursuit task

No-information: Random choice

Sub-intentional: Not rational

Intentional: Others use same model
Lessons

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

- Use your own plans to model others
Tracking Dynamic Team Activity

• Use your own plans to model others

• Use explicit team operators
Tracking Dynamic Team Activity

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  - Introduces challenges of role assignments, and
  - Minimum cost repair
Tracking Dynamic Team Activity

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- Assume agent is using a plan that you could use,
  - But not modeling you
Tracking Dynamic Team Activity

- Use your own plans to model others
- Use explicit team operators
  - Introduces challenges of role assignments, and
  - Minimum cost repair
- Assume agent is using a plan that you could use,
  - But not modeling you
- Act based on assumed actions of others
Class Discussion

Srinivas Ashok on modeling for poker
Reinforcement Learning

- Slides from Tom Mitchell’s ML book