CS344M
Autonomous Multiagent Systems

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Good Afternoon, Colleagues

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- From last week: Difference between open and closed loop?

Logistics

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  - Daniel Urieli: Autonomous Trading in Modern Electricity Markets

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- Final projects due next week (team on Tuesday, report on Thursday)!

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- Include source code with a README
- Include a log file of your team playing

Important Items for Final Reports

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- Include some statistical significance test – you can run games in parallel on condor

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- **Methodology/Algorithm Description:** explain the new ideas/algorithms that the paper is presenting

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- **Summary/Conclusion:** short summary of work presented in the paper as well as possibly mentioning future work

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- **Auctions** for flights, hotels, entertainment tickets
  - **Server** maintains markets, sends prices to agents
  - Agent sends bids to server **over network**

Goal: analytically calculate optimal bids

High-Level Strategy

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  - Bid avg marginal expected utility

Finals

Team	Avg.	Adj.	Institution
ATTac	3622	4154	AT&T
livingagents	3670	4094	Living Systems (Germ.)
whitebear	3513	3931	Cornell
Urlaub01	3421	3909	Penn State
Retsina	3352	3812	CMU
CaiserSose	3074	3766	Essex (UK)
Southampton	3253*	3679	Southampton (UK)
TacsMan	2859	3338	Stanford

- ATTac improves over time
- livingagents is an open-loop strategy

Other TAC competitions

- Supply Chain Management
- Ad Auctions
- Power

Reading Overview — Vidal and Durfee

Recursive Modeling Method

- What should I do?

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

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

Lessons

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

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- Select model that is believed to be closest to current teammate(s) - polynomial weights algorithm from regret minimization
- Plan using selected model to perform well on task

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Observation:

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  - No building a model

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

- What are some incremental approaches for building a predictive model?

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- Am I modeling you?
- Would your end strategy change if I can?

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