Good Morning, Colleagues
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Are there any questions?
Logistics

- Late assignments accepted until the night before the exam (5/12)

- Final: Wednesday May 13th, 2pm-5pm
  - Open notes - handwritten
  - No books, no printouts
Final Exam

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  - Slightly heavier emphasis on material since midterm
  - Certainly a question on planning
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- 3 hours rather than 1 hour and 15 minutes
- Sample - Dan Klein’s Spring 2009 exam with solutions
Tournament Results
Tournament Results

• 3. Team (Tres)
Tournament Results

- 3. TeamTeam (Tres)
- 2. CogentAgents (Colin)
Tournament Results

• 3. TeamTeam (Tres)

• 2. CogentAgents (Colin)

• 1. ArchimedesAndHerodotusAgent (Andrew and Paul)

Congratulations to all!

Peter Stone
Pending questions

• Is bounded optimality important?
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• AI progress - bound more by software or hardware?
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- How would programs learn to learn?
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- How would programs learn to learn?
- What does the scientific community think about the singularity?
  - Doing anything about it?
Pending questions

• Is bounded optimality important?
• AI progress - bound more by software or hardware?
• What if autonomous agents disagree?
• How would programs learn to learn?
• What does the scientific community think about the singularity?
  – Doing anything about it?
• Are AI researchers scared?
My Opinions on...

- Can machines be conscious?
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- Is there anything special about human intelligence (or are we essentially robots?)
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  – Will technology ever "control" us?
  – Have cars already done that?
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  - RoboCup soccer goal - is it possible?
- Current progress - are we "just" climbing a tree?
- Is AI is the right name for the field?
Question

- Would you have rather been born 100 years earlier or 100 years later?
• Does it matter to you if our “descendants” aren’t human?
Question

• If an AI technology runs amok, who is responsible?
Question

- If an AI technology runs amok, who is responsible?
- Are there some types of research we shouldn’t do?
Question

• Can computers perfectly simulate a human’s decision-making (weak AI)?
Question

- Can computers perfectly simulate a human’s decision-making (weak AI)?
- Will computers ever be better than people at everything?
Course Recap

• **First weeks:** search (BFS, A*, minimax, alpha-beta)
  – Find an optimal plan (or solution)
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  - Best thing to do from the current state
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- **Next:** MDPs — towards reinforcement learning
  - Still know transition and reward function
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  - Looking for a **policy** — optimal action from every state
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• **Before Midterm:** Reinforcement learning
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  - Still know transition and reward function
  - Looking for a **policy** — optimal action from every state

- **Before Midterm:** Reinforcement learning
  - Policy without knowing transition or reward functions
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• **Next:** MDPs — towards reinforcement learning
  – Still know transition and reward function
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• **Before Midterm:** Reinforcement learning
  – Policy without knowing transition or reward functions
  – **Still know state**
Course Recap (cont.)

• **Probabilistic Reasoning:** Now state is unknown

• Bayesian networks – state estimation/inference
Course Recap (cont.)

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  - **Week 9**: Conditional independence and inference (exact and approximate)
Course Recap (cont.)

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- Bayesian networks – state estimation/inference
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  - **Week 5:** Utilities
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  - **Week 10:** Exact state estimation over time
Course Recap (cont.)

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• **Week 12**: What if they’re not known?
Course Recap (cont.)

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  - Also Bayesian networks for **classification**
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- **Week 12:** What if they’re not known?
  - Also Bayesian networks for **classification**
  - A type of **machine learning**
Course Recap (cont.)

- **Week 13:** Machine Learning
  - Just a taste – focus on concept learning = classification
Course Recap (cont.)

• **Week 13:** Machine Learning
  – Just a taste – focus on concept learning = classification
  – Perceptrons, SVMs, MIRA
  – Didn’t cover unsupervised learning (in readings)
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  - Reasoning with first order representations
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Peter Stone
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  - Maximize expected utility
### Topics not covered

- Constraint satisfaction  
  (Chapter 6)

- Knowledge representation and reasoning  
  (Chapters 7-9, 11, 12)

- Game theory and auctions  
  (Sections 17.5, 17.6)

- Aspects of learning  
  (Chapters 18, 19)

- Natural language  
  (Chapters 22, 23)

- Vision  
  (Chapter 24)

- Robotics  
  (Chapter 25)
Surveys

- Kim’s and my surveys
- Positive and negative feedback useful
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  - If/when I teach the course again, how should it change?
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- Most important: course rating, instructor rating, written comments
My Perspective

- I’ve enjoyed teaching this class!
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THANKS!!!