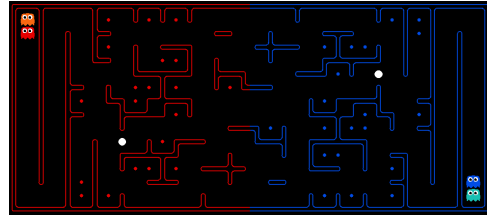


# CS 188: Artificial Intelligence Fall 2010

Lecture 26: Conclusion  
12/2/2010

Dan Klein – UC Berkeley

## Pacman Contest



- Challenges:
- Long term strategy
- Multiple agents
- Adversarial utilities
- Uncertainty about other agents' positions, plans, etc.

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## Pacman Contest



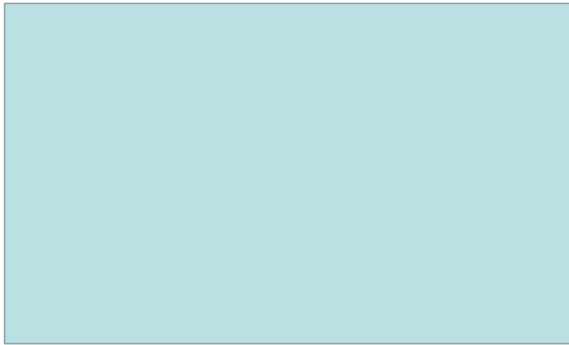
3

## Finalists



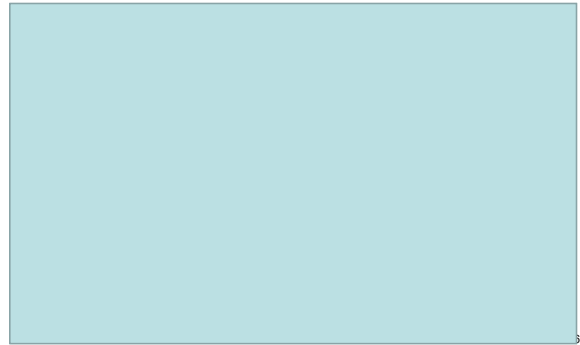
3

## For Third Place



3

## For First / Second Place



3

## ...and Congratulations to All!

- Amazing work by everyone
  - Record number of entries (60 teams)
  - Record number of qualifications (45!)
  - Lots of mutual support on newsgroup / office hours...
- You should all be proud of what you've accomplished!

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## Example: Starcraft



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## What is Starcraft?

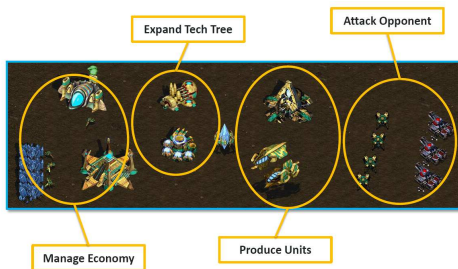


Image from Ben Weber

9

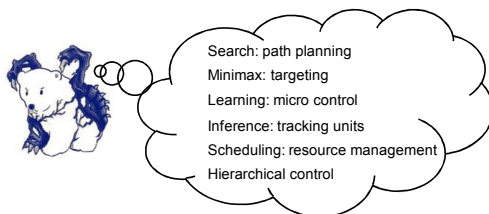
## Why is Starcraft Hard?

- Starcraft is:
  - Adversarial
  - Long Horizon
  - Partially Observable
  - Realtime
  - Concurrent
  - ...
- No single algorithm (e.g. minimax) will solve it off-the-shelf



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## The Berkeley Overmind



<http://overmind.eecs.berkeley.edu>

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## Search for Pathing



[Pathing]

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## Minimax for Targeting



[Targeting] 13

## RL for Micro Control



[RL, Potential Fields] 14

## Inference / VPI / Scouting



[Scouting, Cloaking] 15

## AIIDE 2010 Competition



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## Pacman: Beyond Simulation?



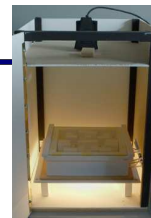
[DEMO]

Students at Colorado University: <http://pacman.elstonj.com>

## Bugman?

### AI = Animal Intelligence?

- Wim van Eck at Leiden University
- Pacman controlled by a human
- Ghosts controlled by crickets
- Vibrations drive crickets toward or away from Pacman's location



[DEMO]

<http://pong.hku.nl/~wim/bugman.htm>

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## Where to go next?

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- Congratulations, you've seen the basics of modern AI
  - ... and done some amazing work putting it to use!
- How to continue:
  - Machine learning: cs281a / cs281b
  - Cognitive modeling: cog sci 131
  - Vision: cs280
  - Robotics: cs287
  - NLP: cs288
  - Decision making: cs289
  - ... and more; ask if you're interested
- Next term:
  - cs194 (Starcraft, not yet in telebears)
  - cs288 (focus on MT for SP11)
  - maybe one other grad class TBA (cs289?)

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## That's It!

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- Help us out with some course evaluations
- Have a good break, and always maximize your expected utilities!

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