AIIDE 2010
StarCraft AI Competition

Ben Weber
UC Santa Cruz
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Competition Challenge

- Build the best performing StarCraft bot
StarCraft

- Expand Tech Tree
- Attack Opponent
- Manage Economy
- Produce Units
Brood War API

- Interface for building StarCraft bots

```java
onFrame() {
    units = Broodwar->getAllUnits();
    unit->attackUnit(enemyUnit);
}
```
StarCraft ProxyBot

- Enables development of bots in additional languages
Participants

- 65 teams registered
- 28 bots submitted
Participating Universities

- University of Novi Sad
- University of Michigan-Ann Arbor
- University of Texas-Pan American
- UC Berkeley
- INRIA Rhône-Alpes, France
- Rensselaer Polytechnic Institute
- Technical University of Lisbon
- National University of Ireland.
- UC Irvine
- University of Alberta
- Finnish Meteorological Institute
- University of Sherbrooke
- Wayne State University
- Tongji University
- Dortmund University of Technology
- Blekinge Institute of Technology
- Universidad Nacional del Sur, Argentina
AI Techniques

- Finite state machines
- Scripting
- Dynamic scripting
- Probabilistic inference
- Influence maps
- Neural networks
- Swarm intelligence
- Potential fields
- Genetic programming
Tournaments

- Micromanagement
- Small-scale combat
- Tech limited game
- Complete game
Tournament 1

- Micromanagement
Tournament 1 Results

- **Winner**
  - **FreSCBot**
  - Florent D'Halluin & Valentin Leon-Bonnet
    - A simple micro bot based on a multi-agent and state machine model.

- **Runner-up**
  - **University of Sherbrooke**
  - Anthony Jo Quinto, Steve Tousignant & Frederic St-Onge
    - The bot uses primarily states machines to make decisions and it can recognize the strategy of its opponent.
Tournament 2

- Small-Scale Combat
Tournament 2 Results

- **Winner**
  - **FreSCBot**
  - Florent D'Halluin & Valentin Leon-Bonnet
    - A simple micro bot based on a multi-agent and state machine model.

- **Runner-up**
  - **University of Sherbrooke**
  - Anthony Jo Quinto, Steve Tousignant & Frederic St-Onge
    - The bot uses primarily states machines to make decisions and it can recognize the strategy of its opponent.
Tournament 3

- Tech-limited game
Tournament 3 Results

- **Winner**
  - **Mimic Bot**
  - Luke Perkins
  - Rensselaer Polytechnic Institute (RPI)
    - The bot mimics its opponent's build order, gaining an economic advantage whenever possible.

- **Runner-up**
  - **Botnik**
  - Wayne State University, Detroit, MI
  - Paul S. McCarthy & Robert G. Reynolds
    - The bot uses a Zealot rush strategy.
Tournament 4

- Complete game
Tournament 4 Results

- **Winner**
  - **Overmind**
  - UC Berkeley
  - David Burkett, David Hall, Taylor Berg-Kirkpatrick, John DeNero, Nick Hay, Haomiao Huang, Eugene Ma, Yewen Pu, Jie Tang, Dan Klein
    - The bot uses a variety of AI techniques for decisions at various levels of abstraction.

- **Runner-up**
  - **Krasi0**
  - Krasimir Krastev
    - The bot uses FSMs based on my knowledge of the game.
Challenges
Conclusion

- The competition was a success!
Acknowledgements

- Blizzard
- Participants
- BWAPI Team
- StarCraft community
- AAAI
Questions?

- Competition Information
  - http://eis.ucsc.edu/StarCraftAICompetition
  - YouTube: UCSCbweber
  - Twitter: StarCraftAIComp

- Brood War API
  - http://code.google.com/p/bwapi/