

AIIDE 2010

StarCraft AI Competition

expressiveintelligencestudio

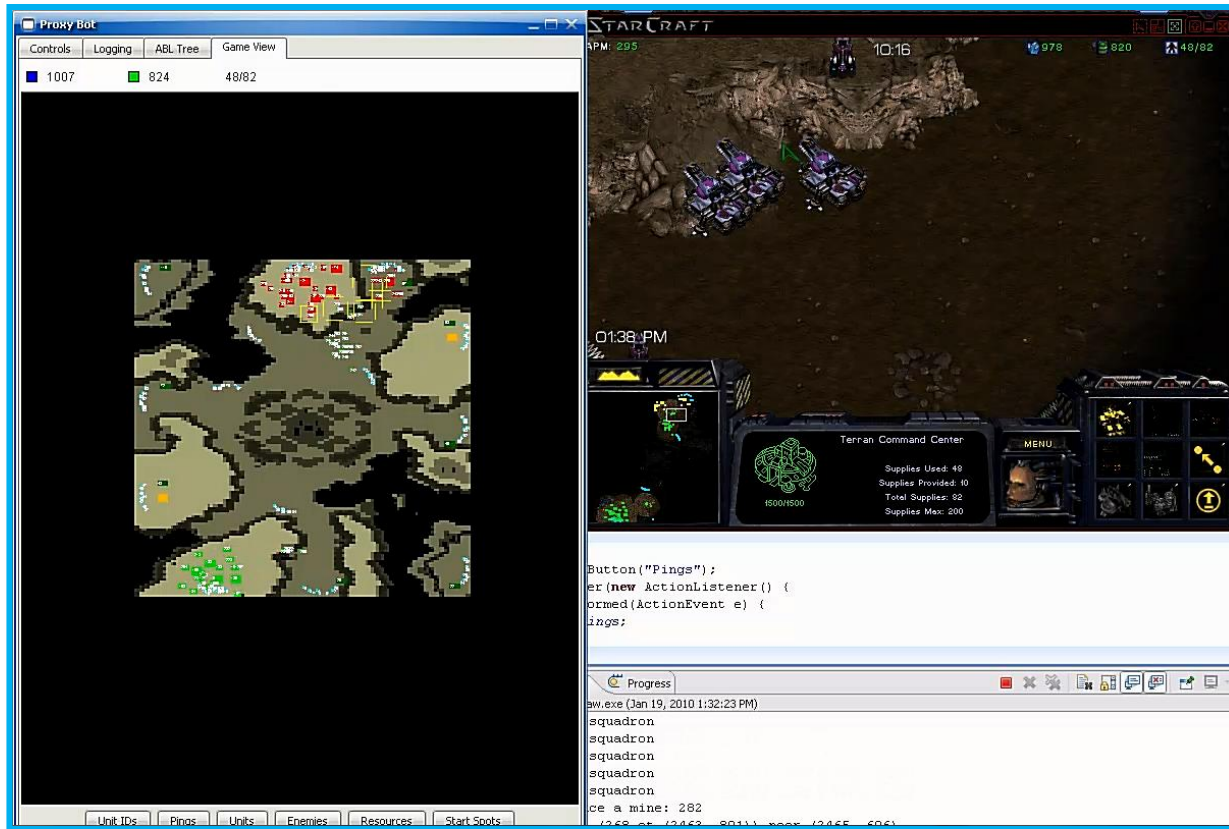
Ben Weber

UC Santa Cruz

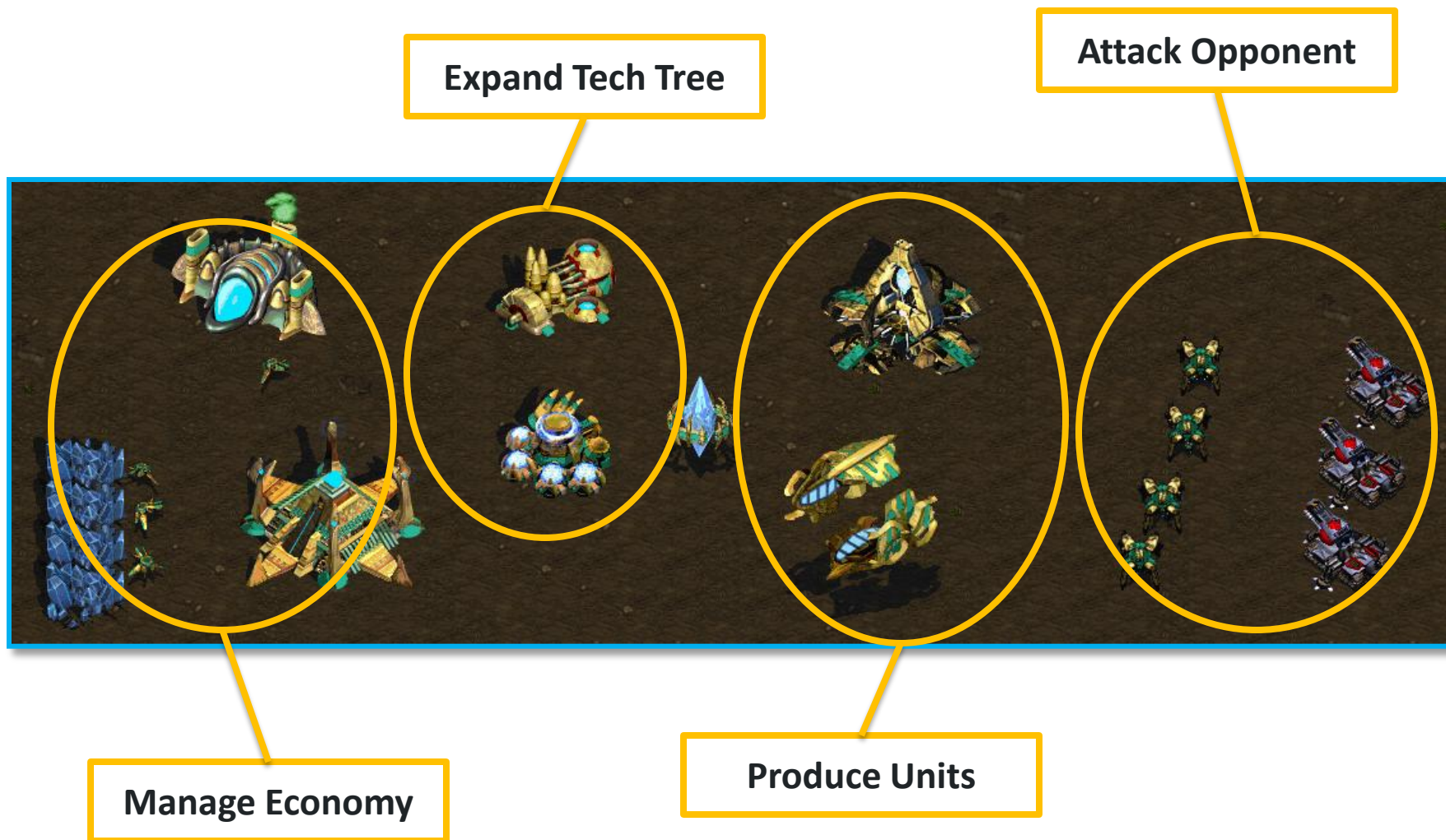
October 13, 2010

Competition Challenge

- Build the best performing StarCraft bot



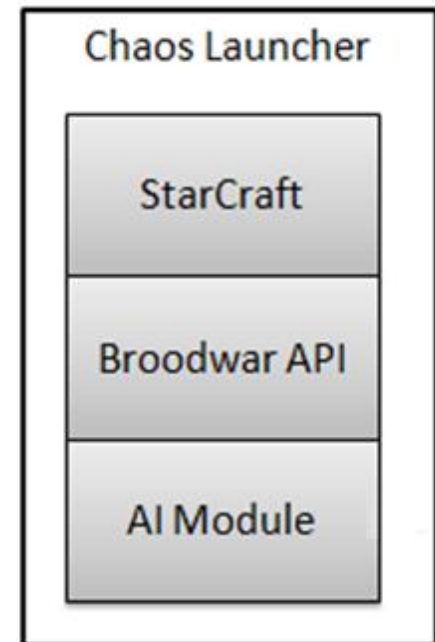
StarCraft



Brood War API

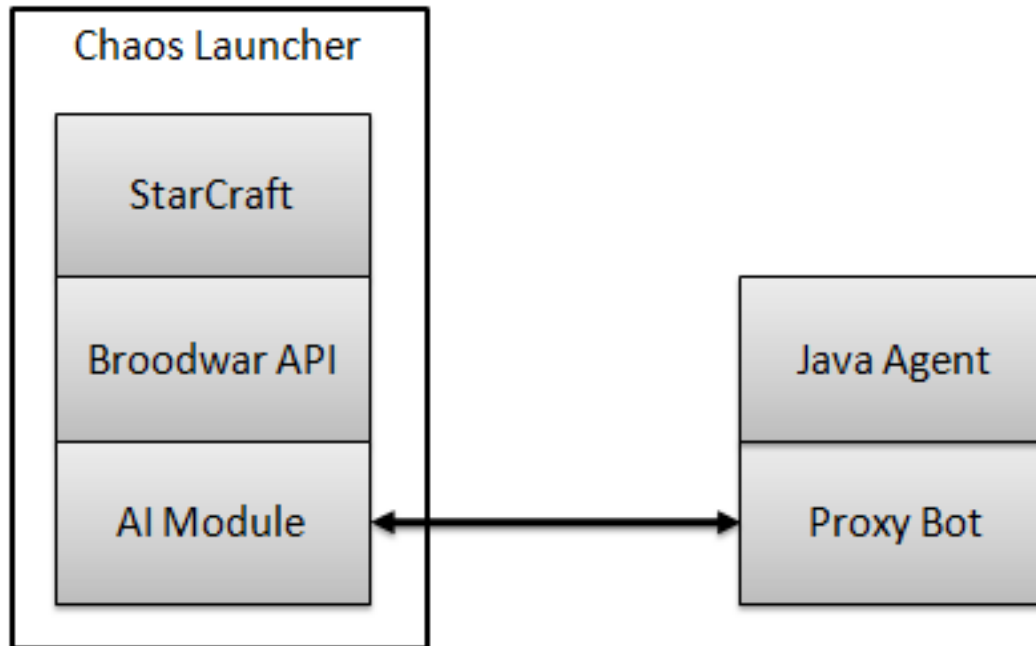
- Interface for building StarCraft bots
 - <http://code.google.com/p/bwapi/>

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



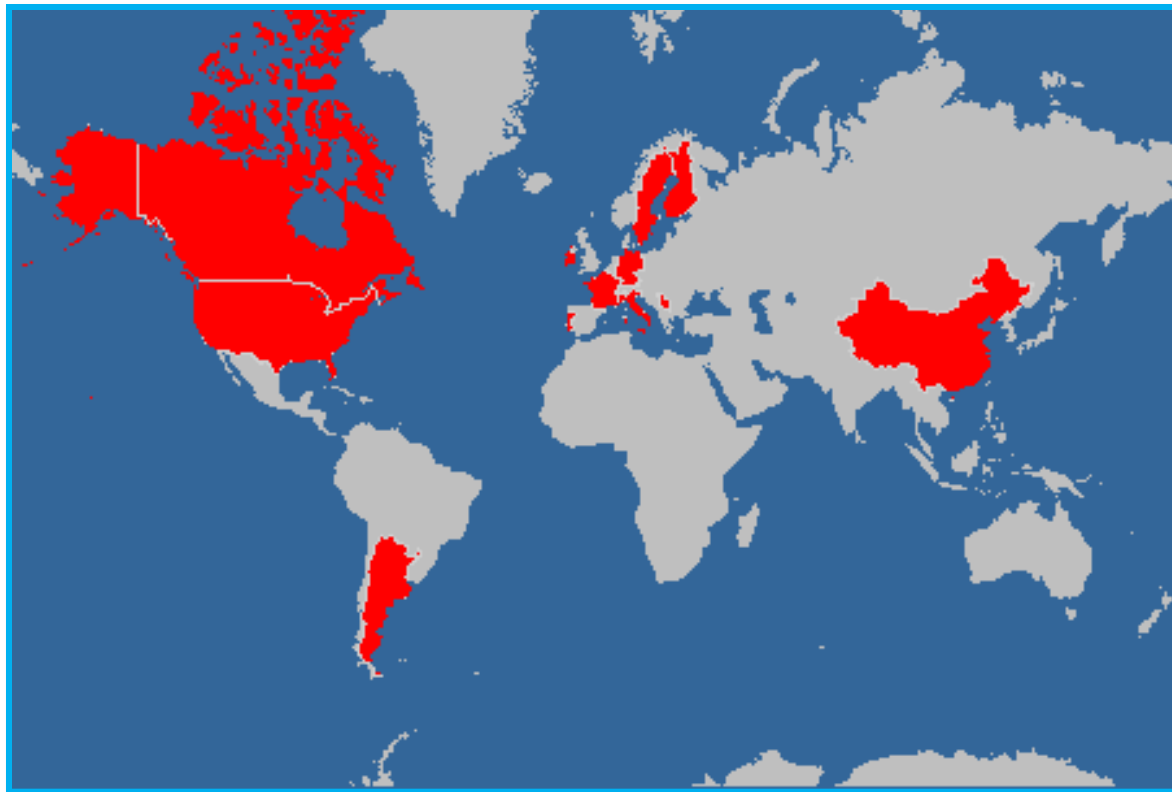
StarCraft ProxyBot

- 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

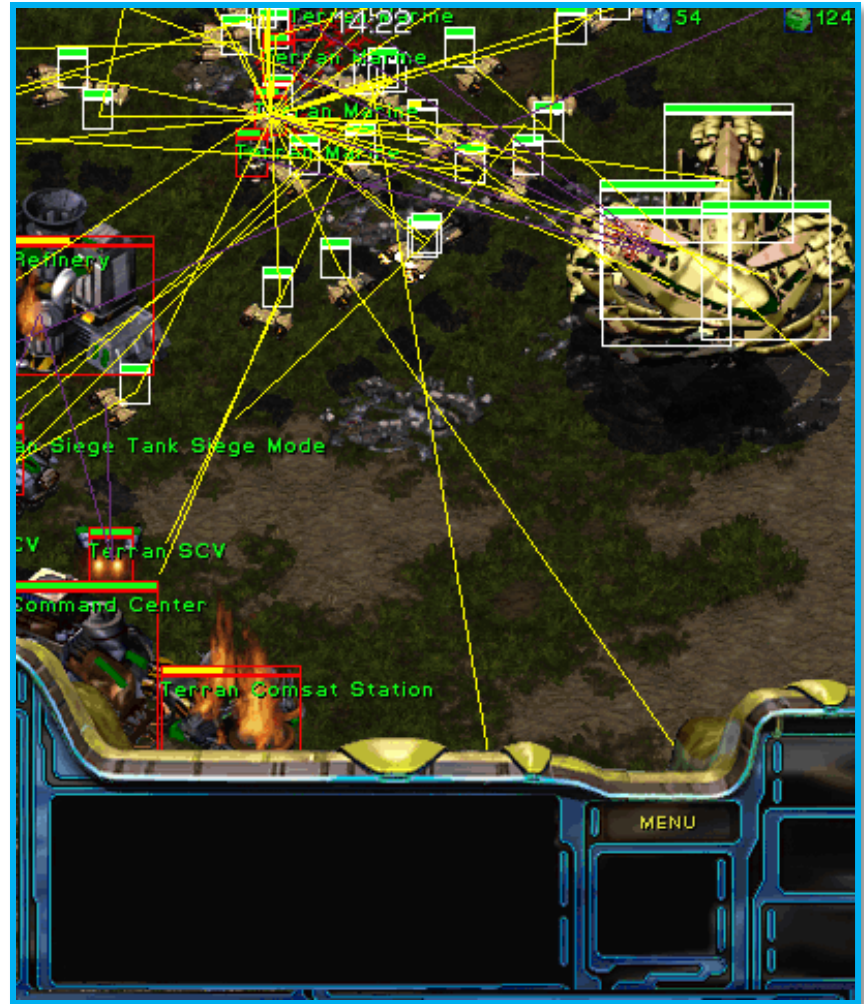
AI Techniques

- 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



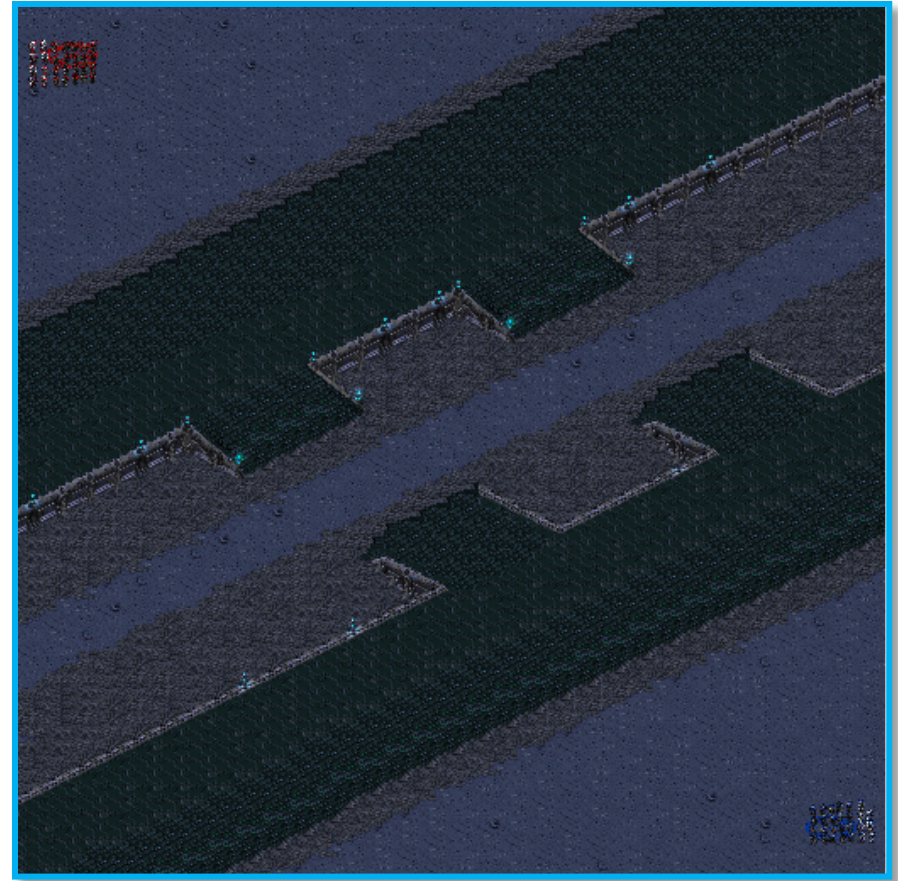
Tournament 1 Results

- 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



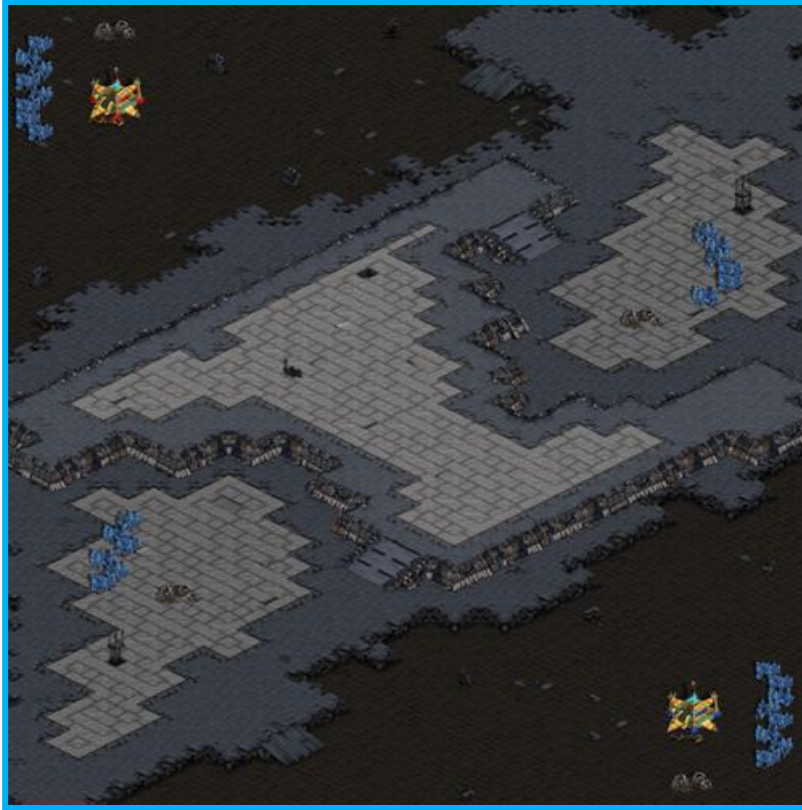
Tournament 2 Results

- 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**

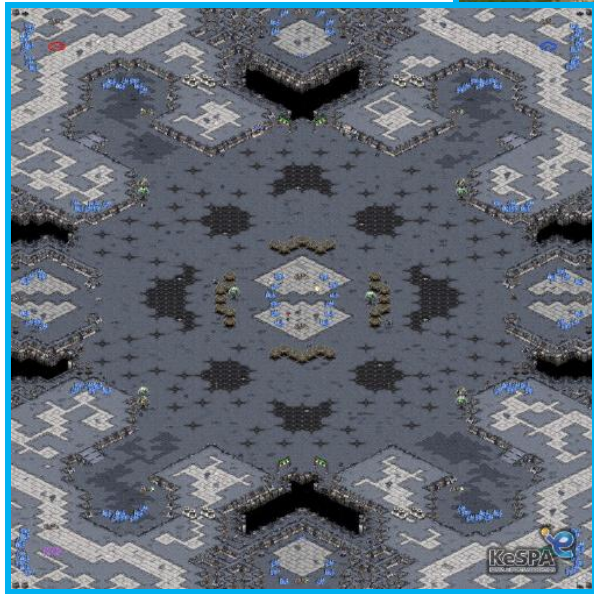
- Wayne State University, Detroit, MI

- 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.*

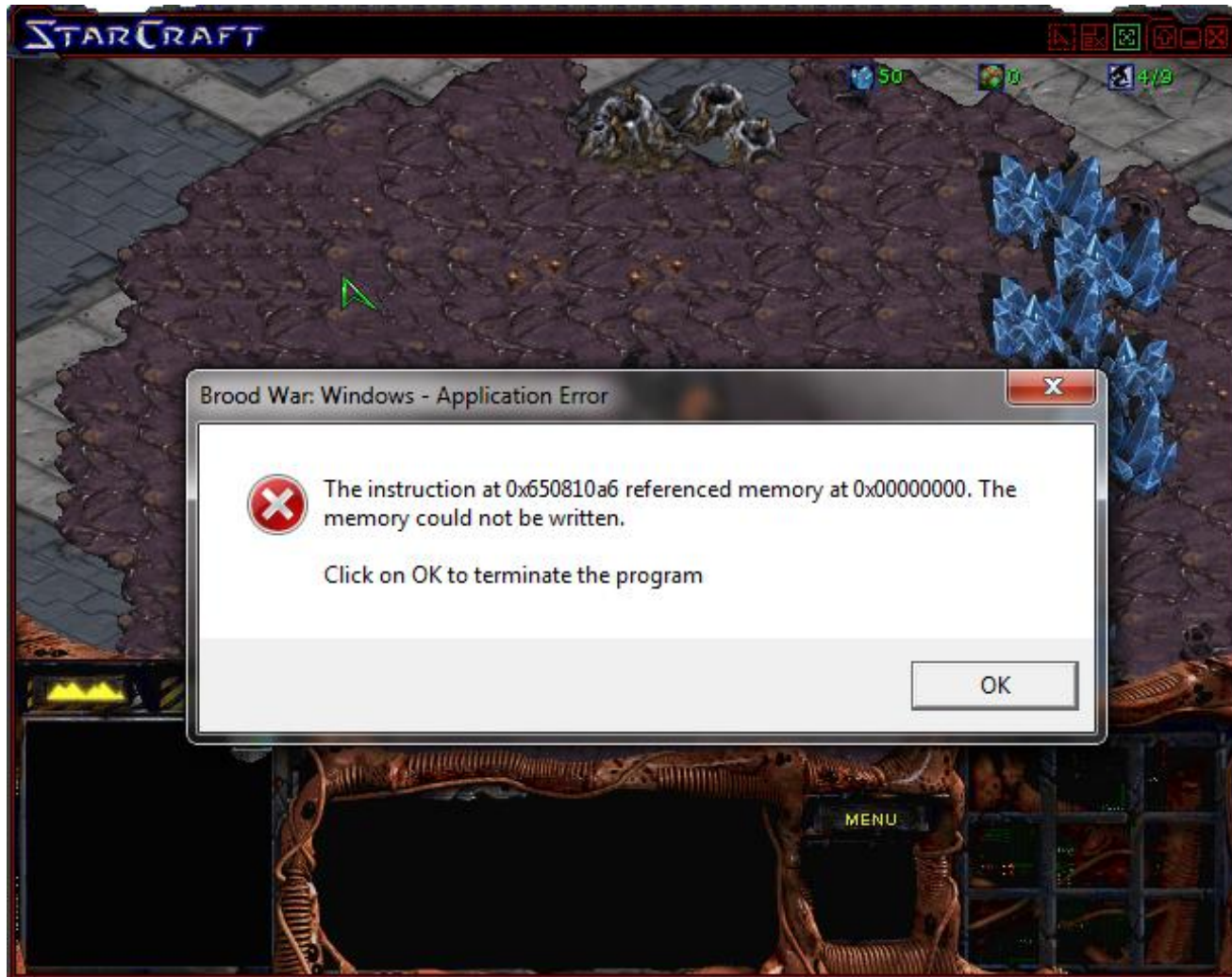
- Runner-up

- **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/>

