Real-Time Strategy Game AI and More

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(Game-playing, Analytical methods, Minimax search and Empirical Studies)

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My Current Research Interests

- Single-agent and adversarial planning
- Abstraction
- Acting under uncertainty

Application: Real-Time Strategy (RTS) Games

ORTS – An Open RTS Game Engine

RTS Games and AI Research

- Current RTS game AI systems have little reason, learn, or planning abilities
- Large number of simultaneous micro actions
- Fast-paced action
- Imperfect information
- RTS games are feature-rich and can be tailored to particular research questions

RTS games suitable testbed for real-time AI research

RTS game AI tournaments planned for next year at AIIDE

Game 1: Cooperative Pathfinding in Dynamic Environments
Game 2: Tank Combat

Game 3: Simplified RTS Game

Need Help!

Tournament Infrastructure
- Match scripts
- Generating reasonably fair random maps
- Adding spectator mode to the ORTS GUI
- ORTS QA

Tournament Entries!
- Hook up pathfinding algorithms to ORTS (Game 1,2,3)
- Small-scale combat (Game 2,3)
- Build-order optimization (Game 3)
- Resource allocation, scheduling (Game 3)
- Scouting (Game 3)

Interested?

605 course on RTS game topics next term

Team effort to win at AIIDE!