

Intelligent, Believable, Social Agents in a Real-Time, 3D World

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Project Abstract

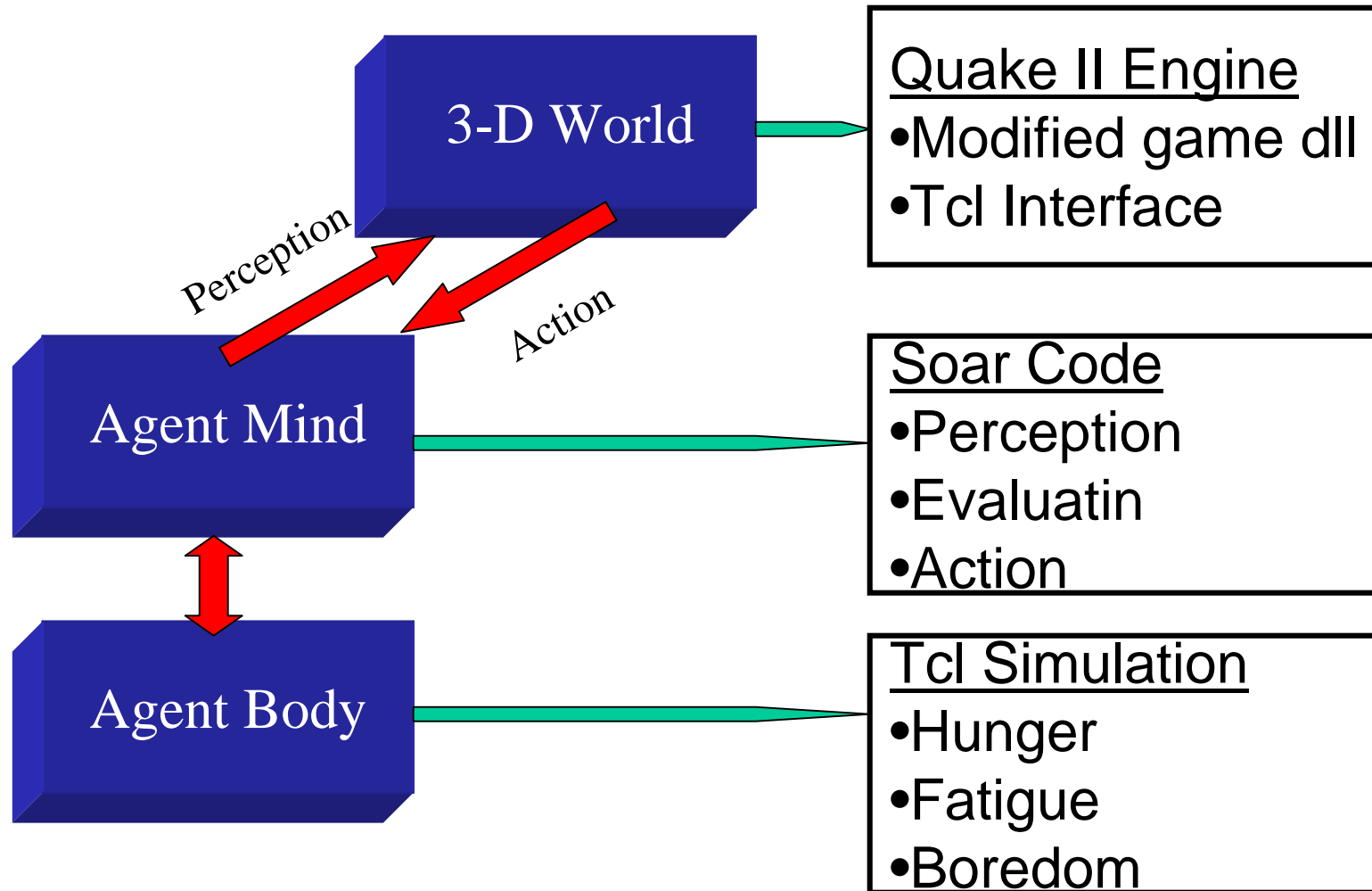
My primary goals in this project are driven by the overwhelming lack of socially motivated AI in modern computer games. My project gets away from the current 'search and destroy' AI framework commonly used in games, and takes on the more difficult task of creating realistic social agents. In order to enhance the realism, my agents interact in a real-time 3D virtual world. This combination of social intelligence modeling, real-time 3D, and current game technology is ripe for exploration. I believe that this makes my project a useful contribution of the world of AI.

There was significant work involved in translating realistic social behavior into the Soar architecture. In order to do this, I created a hierarchy of goals and motivations for the agents, incorporating both individual necessity and social conscience. The US Marine and mutant populated Quake II world would not suffice as a world for these social characters. In order to make it more hospitable, I redesigned the world layout, the objects within, and the general look of the environment. To this end, I transformed the weapons, ammunition, and bloodstained walls into more benign objects such as food and supplies. I believe that, in the end, this project successfully bridged the gap between social AI and modern computer gaming.

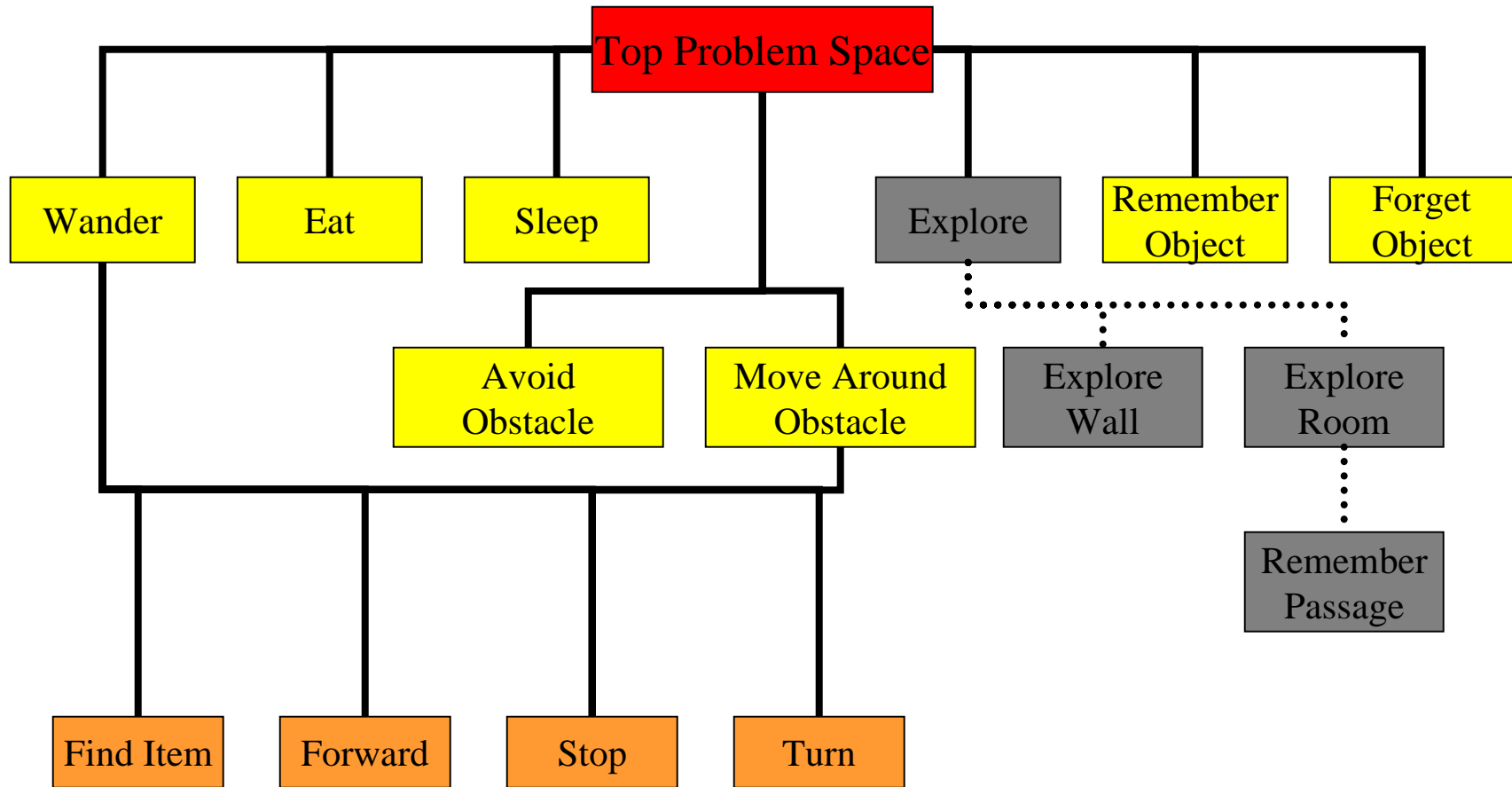
Abstract Agent Framework

- Agent's perceptual system creates symbols representing the current state of the world and the agent's physical state.
- Perceptual symbols in working memory trigger cognitive responses (represented as rules) to create mental goals and generate physical actions.
- External actions (such as moving or eating) change the state of the world or the agent's body. Agent is then ready for new perception.

System Configuration



Soar Operator Hierarchy



..... = Not fully implemented