

There will be a U-REaSON seminar event on this Friday, April 6th, from 12:00pm to 1:00pm in room 205 of the Civil Engineering Building. Speakers for this week are Justin Blount (12:00pm - 12:30 pm) and Yin Lu (12:30 pm -1:00 pm).

Speaker : Justin Blount

Title: Reasoning about the Intentions of Agents

Abstract: We are interested in better understanding the mental attitudes of an agent, their relations with the physical world and with the agent's observations and actions. We combine the notion that intentions play a primary role in the behavior of rational agents with a well-developed AAA agent architecture that models the agent's knowledge and reasoning using knowledge representation languages based on Answer Set Prolog. We present a Theory of Intentions that includes *intentions to achieve* goals and *intentions to execute* actions. The former establishes a relationship between the beliefs and intentions of the agent with its planning process. The later includes reasoning about unexpected observations and situations requiring replanning. We believe that our approach allows for the better understanding of the properties of intentions especially the classical problem of the relationship between beliefs, intentions, and actions. In addition to being used for the specification of and reasoning about agents it can also become part of the agent's architecture and be used by an agent to achieve its goals.

Speaker: Yin Lu

Title: Performance Model Directed Data Sieving for High Performance I/O

Abstract: Many scientific computing applications and engineering simulations exhibit noncontiguous I/O access patterns. Data sieving is an important technique to improve the performance of noncontiguous I/O accesses by combining small and noncontiguous requests into a large and contiguous request. It has been proven effective even though more data is potentially accessed than demanded. In this study, we propose a new data sieving approach namely Performance Model Directed Data Sieving, or PMD data sieving in short. It improves the existing data sieving approach from two aspects: 1) dynamically determines when it is beneficial to perform data sieving; and 2) dynamically determines how to perform data sieving if beneficial. It improves the performance of the existing data sieving approach considerably and reduces the memory consumption as verified by both theoretical analysis and experimental results. Given the importance of supporting noncontiguous accesses effectively and reducing the memory pressure in a large-scale system, the proposed PMD data sieving approach in this research holds a great promise and will have an impact on high performance I/O systems.