An Agent-Based Approach to Dynamic Experience Management in Theme Park

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ABSTRACT

In this paper, we introduce experience management in theme parks as an exciting new application domain for research in massively multi agent/human systems. Although there are many facets to the problem of theme park experience management, we focus on the queueing at attractions since high wait times could significantly affect visitor's experience. To facilitate the design of better crowd control mechanisms and theme park layout, we have constructed a multi-agent simulation platform that is based on the behavioral data collected from a real-world field experiment. In particular, we have made three key contributions: (a) To understand human behavior in a theme park, we designed and conducted a real-world experiment using human subjects in a real theme park; (b) From the collected data, a visitor's behavioral model is created and based on it, an agent-based simulation (with agents representing humans) is constructed and validated; and finally (c) We demonstrate how the simulator can be used to understand crowd build-up and the impact of various decisions on visitor experience.