

Optimal Control Approaches to the Analysis and Synthesis of Social Behavior

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Recent years have seen algorithmic breakthroughs for finding approximate solutions to optimal control problems. Here we show how we are using these approaches to analyze social behavior and to synthesize it in robots and intelligent social agents in real time. Applications include analysis of motion capture data in mother infant interaction to infer infant intentions. Coordination of facial expression sensors and actuators in social robots, and synthesis of affect sensitive tutoring systems.