

Inferring Emotions in Tutorial Dialogue

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AutoTutor is an animated conversational agent that simulates a human tutor by holding a conversation with the learner in natural language. AutoTutor holds a mixed initiative dialogue by asking and answering questions, giving hints, filling in missing pieces of information, and correcting misconceptions. Some versions of AutoTutor have speech recognition, whereas others have keyboard entry. We are currently designing a version of AutoTutor that attempts to infer the affective states of the learner on the basis of the dialogue history, facial expressions, body posture, and speech intonation. We have completed 3 experiments on college students that associate features of these 4 channels with the following 6 affective states that are most prevalent during learning: confusion, frustration, boredom, flow/engagement, delight, and surprise. We have developed algorithms that automatically detect these emotions on the basis of single channels and combinations of channels. The next step is to develop and test models of tutoring that intelligently respond to these affective states of the learner.