

Detecting and Adapting to Student Uncertainty in a Spoken Tutorial Dialogue System

Diane Litman¹

Abstract. We are currently building an adaptive tutorial spoken dialogue system, with the goal of using spoken and natural language processing to monitor and respond to the affective state of student uncertainty. First, I will discuss the empirical approach used to design and implement our system. To detect student uncertainty, we use machine learning to develop a predictive model based on lexical and prosodic features of student utterances. To develop system responses to student uncertainty, we use a bigram analysis of a human tutoring corpus to identify dependencies between uncertain student answers and subsequent tutor responses. I will conclude the talk by presenting initial evaluation results from a first controlled experiment, comparing wizard versions of both our new adaptive and our original non-adaptive tutorial dialogue systems.

¹ Department of Computer Science & Learning Research and Development
Center University of Pittsburgh Pittsburgh, PA USA