**Toward Automatic Analyses of Conversations**

**Ming Ming Chiu**

The Education University of Hong Kong

**Abstract**

As people can learn and solve problems together that they cannot do alone, automatic analysis of conversations can yield insights for improving them to aid learning and teaching. Such automatic analyses must successfully traverse the obstacle course of voice transcription, categorization, and statistical analysis. Automated transcription is available commercially, and computational linguistics enables automatic categorization. Hence, this talk focuses on automated statistical analysis (statistical discourse analysis [SDA] + artificial intelligence expert system). SDA models (a) pivotal actions that radically change subsequent processes and (b) effects of explanatory variables at multiple levels (sequences of turns/messages, time period, individual, group, organization, etc.) on target actions. The expert system translates a theoretical model into a statistical model, tests it on the data, interprets the results, (if needed, rewrites itself to run a revised analysis), and prints a table of results. Automated SDA is illustrated on 17 students’ 1330 messages in 13 weekly discussions of their lesson designs.