

**The University of Chicago**

Department of Statistics

Master's Seminar

---

**FANG LIU**

Department of Statistics  
The University of Chicago

**“Automatic Classification of Statement  
and Question Intonations in Mandarin”**

**FRIDAY, April 14, 2006 at 9:00 AM  
110 Eckhart Hall, 5734 S. University Avenue**

### **ABSTRACT**

Conflicting reports abound in the literature regarding the critical characteristics of statement and question intonations in Mandarin. In this paper, decision trees with three different sets of feature vectors are implemented to determine the most significant elements in an utterance that signify its sentence type (statement vs. question). For 10-syllable utterances, the highest correct classification rate (85%) is achieved when normalized (to remove the effects of speaker, tone, and focus) final F0's of the 7th and the last syllables are included in the tree construction. This performance is close to previously reported human performance (89%) for the same testing set. The results confirm the previous finding that the difference between statement and question intonations in Mandarin is manifested by an increasing departure from a common starting point toward the end of the sentence.

---

Information about building access for persons with disabilities may be obtained in advance by calling the department office at (773) 702-8333.