Spoken Language Systems - Technical Challenges for Speech and Natural Language Processing

Chin-Hui Lee

Distinguished technical member of staff and the head
of Bell Labs' Dialogue Systems Research Department
Bell Labs, Lucent Technologies, 600
Mountain Ave, Murray Hill, NJ 07974, USA.

Abstract

Speech is the most natural means of communication among humans. It is also believed that spoken language processing will play a major role in establishing a universal interface between humans and machines. Most of the existing spoken language systems are rather primitive. For example, speech synthesizers for reading unrestrict text of any language is only producing machine-sounding speech. Automatic speech recognizers are capable of recognizing spoken language from a selective population doing a highly restricted task. In this talk, we present some examples of spoken language translation and dialogue systems and examine the capabilities and limitations of current spoken language technologies. We also discuss technical challenges for language researchers to help realize the vision of natural human-machine communication to allow humans to converse with machines in any language to access information and solve problems.