

Automatic Speaker Recognition – Key Take Away Questions

1. What is the goal of automatic speaker recognition task? What is the difference between speaker identification system and speaker verification system? Illustrate the difference with a block diagram and explain the difference in terms of theoretical criteria and evaluation measures. How can we achieve “open set” speaker identification by putting these two systems together?
2. Which kind of acoustic features are suitable for speaker discrimination?
3. Description of speaker verification system
 - a. System and parameters?
 - b. “Enrollment” (training)?
 - c. Hypothesis testing? (decision making)
4. What is text-dependent speaker verification system? What is text-independent speaker verification system? Which one of the systems would typically lead to better speaker verification performance? Suppose you are tasked with building a speaker verification system for forensic application. Which one of the systems would you build? Justify your choice.
5. Given two or more speaker verification systems, how can we determine which one of them is the best speaker verification system?
6. One of the applications of speaker verification system is access control using voice-based person authentication. Today, text-to-speech systems have evolved to a level where voice of a speaker can be “faked”, i.e., artificially generated. Also, today we can easily record and play a person’s voice. How can we protect speaker verification systems from such “attacks”?