

# Graduate Seminar



## Human and Machine Recognition of Noisy speech and of Speaker Identity

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**4:30 pm Scaife Hall 125**

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### Abstract:

In this talk, I will give an overview of our research activities in speech processing and focus on two areas of long-standing interest: Noise Robust Automatic Speech Recognition (ASR), and Machine and Human Perception of Speaker Similarity. Speech recognition systems trained in quiet suffer from performance degradation in the presence of ambient noise. This is mainly due to the mismatch between clean acoustic models and noisy speech inputs. Several of our ASR techniques are inspired by models of human speech production and perception, especially in noise. In the speaker identification area, our work focuses on understanding and modeling voice quality. A talker's voice quality conveys many kinds of information, including emotional state and personal identity. Variations in both the voice source and the vocal tract affect voice quality and there can be significant inter- and intra-talker variability. Understanding what aspects of a voice are talker-specific should aid in understanding the human limits in perceiving speaker differences and in developing robust speaker identification (SID) algorithms.

### Bio:

Abeer Alwan received her Ph.D. in EECS from MIT in 1992. Since then, she has been with the EE department at UCLA where she is now a Full Professor and Vice Chair of Undergraduate Affairs. She established the Speech Processing and Auditory Perception Laboratory at UCLA.

Dr. Alwan is a recipient of several awards including: the NSF Research Initiation Award, the NIH FIRST Award, the UCLA-TRW Excellence in Teaching Award, Okawa Foundation Award in Telecommunication, and the Engineer's Council Educator Award.

She is a Fellow of the Acoustical Society of America, IEEE, and International Speech Communication Association (ISCA). She was a Fellow at the Radcliffe Institute, Harvard University, co-Editor in Chief of Speech Communication, Chair of the IEEE Flanagan Committee and Vice Chair of the IEEE Awards committee. She was recently elected to the Board of Governors of the IEEE Signal Processing Society.