



IEEE Distinguished Lecturer Program
Department of Computer Science & Engineering, HKUST

Present

**“Engineering Advances in Measuring
and Using Speech Production Information”**

by

Prof. Shrikanth Narayanan

University of Southern California, USA

Venue: Lecture Theatre C, HKUST

Date/Time: 28th Oct 2010 (Thursday) 4:00 - 5:30pm

(Light refreshment will be served at 3:30pm)

Abstract

The human speech signal carries crucial information not only about communication intent but also affect and emotions. From a basic scientific perspective, understanding how such rich information is encoded in human speech can shed light on the underlying communication mechanisms. From a technological perspective, finding ways for automatically processing and decoding this complex information in speech and spoken language continues to be of interest for a variety of applications. Both are vastly challenging and, inherently interdisciplinary endeavors. One line of work in this realm aims to synergistically connect these perspectives in creating technology advances to obtain insights about basic speech communication mechanisms and in utilizing direct information about human speech to inform technology development.

A longstanding challenge in speech production has been the ability to examine real-time changes in the shaping of the vocal tract; a goal that has been furthered by imaging techniques such as ultrasound, movement tracking and magnetic resonance imaging. The spatial and temporal resolution afforded by these techniques, however, has limited the scope of the investigations that could be carried out. In this talk, we will highlight recent advances that allow us to perform near real-time investigations on the dynamics of vocal tract shaping during speech. We will also use examples from recent and ongoing research to describe some of the methods and outcomes of processing such data, especially toward facilitating speech analysis and modeling, including speech technology development.

Biography

Shrikanth (Shri) Narayanan is the Andrew J. Viterbi Professor of Engineering at the University of Southern California (USC), where he holds appointments as Professor of Electrical Engineering, Computer Science, Linguistics and Psychology, and as Director of the USC Ming Hsieh Institute. Prior to USC he was with AT&T Bell Labs and AT&T Research. His research focuses on human-centered information processing and communication technologies. Shri Narayanan is a Fellow of the Acoustical Society of America, IEEE, and the American Association for the Advancement of Science. He is an Editor for the Computer Speech and Language Journal and an Associate Editor for the IEEE Transactions on Multimedia, IEEE Transactions on Affective Computing and the Journal of the Acoustical Society of America. He is a recipient of several awards including Best Paper awards from the IEEE Signal Processing Society (SPS) in 2005 and in 2009 and selected as a Distinguished Lecturer for the IEEE SPS for 2010-11.

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