

# IEEE SCV Signal Processing Society

**Date:** April 12th 2004  
**Title:** On the Deployment of the Voice Biometric: Challenges and Best Practices  
**Speaker:** Larry Heck, PhD, Vice President, R&D of Nuance Communications

**Location:** National Semiconductor Credit Union Building (Building 31), 955 Kifer Rd., Sunnyvale (Near the intersection of Lawrence and Central Expressway);  
**Coordinates:** N37deg 22.464' W122deg 00.272' (WGS84);  
[http://maps.yahoo.com/maps\\_result?ed=Lz2FO.p\\_0TpVKFWBuA124OtTr9dn&csz=Sunnyvale%2C+CA&country=us](http://maps.yahoo.com/maps_result?ed=Lz2FO.p_0TpVKFWBuA124OtTr9dn&csz=Sunnyvale%2C+CA&country=us)

**Directions:** Take 101 to Lawrence Expressway. Head south on Lawrence to Kifer (past Central). Turn right on Kifer. Go 0.5 miles on Kifer and turn right into the Credit Union parking lot. Entrance is on the back side of the building.

**Time:** 6:30pm: Fast Food & drinks (\$1 Donation Recommended towards Refreshments)  
7:00pm: Announcement  
7:05pm: Talks starts

## **Abstract:**

Wouldn't it be great not to have to remember all those PINs we are forced to use for transactions over the telephone? As it turns out, those companies that subject us to PINs would like to get rid of them too. Recent analyst estimates show that approximately 30% of all help desk calls to human agents are for resetting forgotten PINs, costing an average of \$20/call and millions per year for large enterprises. The solution is to replace PINs with a biometric: verify people by their physiological or behavioral characteristics (e.g., fingerprints, voice, iris). Comparing biometrics, voice has a number of distinct advantages for securing telephone-based transactions: it leverages existing infrastructure, uses an inexpensive and ubiquitous input device (telephone), and is the most intuitive and least obtrusive biometric. So why is it taking so long for the voice biometric to save us from PINs? In this talk, I will address that question and I will discuss how Nuance has been working hard to make the voice biometric pervasive on the telephone network.

## **Biography:**

Larry Heck, PhD, is the Vice President of R&D at Nuance Communications, leading Nuance's R&D efforts in natural language processing, speech recognition, voice authentication, & text-to-speech synthesis. He received the PhD in Electrical Engineering from Georgia Tech in 1991. Dr. Heck then worked at SRI International and served as principal investigator for a number of federally funded research programs (NSA, DARPA, ORD/CIA) in acoustics and speech, including active noise & vibration control, acoustic machinery monitoring, and speaker recognition. In speaker recognition, he invented several of the key algorithms around the detection and compensation for distortion over wire line and wireless telephone communication channels and the integration of higher level knowledge into voice authentication systems. He began working with Nuance (then Corona) in 1995 to initiate efforts towards developing the Nuance Verifier(tm). Dr. Heck is a member of the IEEE Signal Processing Society's Speech Technical Committee, on the board of the Speaker & Language Characterization Special Interest Group of the International Speech Communication Association. He has published over 50 articles in acoustics and speech processing, and has 6 patents in speech and speaker recognition.

*Chapter web:* <http://www.ewh.ieee.org/r6/sps/>