

Experiential Signal Processing (ESP)
and
Experiential Telecommunications (ET):

Sense Everything, Transmit Everything You Sense, Present
Everything You Receive

Professor Jerry D. Gibson
Media Arts and Technology / Electrical and Computer Engineering
UC Santa Barbara

Date: Friday, March 2, 2007

Place: [Buchanan 1930](#)

Time: 2:00 pm — 3:00 pm

Abstract:

We define the new research fields of **Experiential Signal Processing (ESP)** and **Experiential Telecommunications (ET)**. **ESP and ET are concerned with sensing, communicating, and presenting an Environment, Event, or Experience at a distance to allow experiential participation at the appropriate level by a user.** The essence of ESP and ET is captured by the slogan **Sense Everything, Transmit Everything You Sense, Present Everything You Receive.** The essential difference between Experiential Telecommunications and prior multimedia communications systems is explicit in this stated purpose. The ultimate goal of Experiential Telecommunications is to provide access to an Event, Environment, or Experience that is not otherwise available or reproducible. The presentation will focus on characterizing a unidirectional system with a special purpose sensing environment and a special purpose delivery and presentation environment. Envisioned near term applications of Experiential Signal Processing and Experiential Telecommunications are the delivery and archival of key performances by artists and entertainers, athletic events, delivery and documentation of key events, mass communications of difficult ideas and concepts with the public, expanded opportunities for information gathering by decision makers, content delivery for training and education, and enhanced collaboration for management, design, marketing, development, research, and information sharing. We develop our vision of the fields of Experiential Signal Processing and Experiential Telecommunications, describing key attributes and components and discussing related concepts. We also highlight research challenges.

JERRY GIBSON is Professor of Media Arts & Technology and Electrical and Computer Engineering at the University of California, Santa Barbara. He is co-author of the books *Digital Compression for Multimedia* (Morgan Kaufmann, 1998) and *Introduction to Nonparametric Detection with Applications* (Academic Press, 1975 and IEEE Press, 1995) and author of the textbook, *Principles of Digital and Analog Communications* (Prentice-Hall, second ed., 1993). He is Editor-in-Chief of *The Mobile Communications Handbook* (CRC Press, 2nd ed., 1999), Editor-in-Chief of *The Communications Handbook* (CRC Press, 2nd ed., 2002), and Editor of the book, *Multimedia Communications: Directions and Innovations* (Academic Press, 2000).

His research interests include data, speech, image, and video compression, multimedia over networks, wireless communications, information theory, and digital signal processing.

media.igert.ucsb.edu