

**Keynote Speaker:** Phillip C-y Sheu

**Title:** Semantic Computing

**Abstract:** This talk highlights the past, present and future of semantic computing that brings together those disciplines concerned with connecting the (often vaguely-formulated) intentions of humans with computational content. This connection can go both ways: retrieving, using and manipulating existing content according to user's goals ("do what the user means"); and creating, rearranging, and managing content that matches the author's intentions ("do what the author means").

The content addressed in SC includes, but is not limited to, structured and semi-structured data, multimedia data, text, programs, services and, even, network behavior. This connection between content and the user is made via (1) Semantic Analysis, which analyzes content with the goal of converting it to meaning (semantics); (2) Semantic Integration, which integrates content and semantics from multiple sources; (3) Semantic Applications, which utilize content and semantics to solve problems; and (4) Semantic Interfaces, which attempt to interpret users' intentions expressed in natural language or other communicative forms.

The field Semantic Computing applies technologies in natural language processing, data and knowledge engineering, software engineering, computer systems and networks, signal processing and pattern recognition, and any combination of the above to extract, access, transform and synthesize the semantics as well as the contents of multimedia, texts, services and structured data.

**Bio-Sketch:** Dr. Phillip C-Y. Sheu is currently a professor of EECS and Biomedical Engineering at the University of California, Irvine. He also serves as the Founding Director of the Institute for Semantic Computing, an international research organization that connects industry, government and academia to promote semantic technologies. He received his Ph.D. and M.S. degrees from the University of California at Berkeley in Electrical Engineering and Computer Science in 1986 and 1982, respectively. From 1986 to 1988, he was an assistant professor at School of Electrical Engineering, Purdue University. From 1989 to 1993, he was an associate professor of Electrical and Computer Engineering at Rutgers University.

He has published two books: (1) Intelligent Robotic Planning Systems and (2) Software Engineering and Environment - An Object-Oriented Perspective, and more than 100 papers in object-relational data and knowledge engineering and their applications. His current research interests include semantic computing and complex biomedical systems. He is a Fellow of IEEE and the founding editor-in-Chief of the International Journal of Semantic Computing. He is

also a co-editor of the forth-coming book “Semantic Computing” (Wiley/IEEE Press, Eds. Phillip Sheu, Heather Yu, C.V. Ramamoorthy, Aravind Joshi and L.A. Zadeh, 2008).