

SEMANTIC COMPUTING & Artificial Intelligence

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Semantic Computing (SC) is an emerging field that addresses computing technologies which allow users to search, create, manipulate and connect computational resources (including data, documents, tools, people, agents, devices, etc.) based on semantics.

Semantic Computing includes the computing technologies (e.g., artificial intelligence, natural language, software engineering, data and knowledge engineering, computer systems, signal processing, etc.), and their interactions, that may be used to extract or process computational content and descriptions. While some areas of Semantic Computing have appeared as pieces in different disciplines, Semantic Computing glues these pieces together into an integrated theme with synergetic interactions. It addresses not only the analysis and transformation of signals (e.g., pixels, words) into useful information, but also how such information can be accessed and used to synthesize new signals.

This talk will discuss some pieces of Semantic Computing that make it the fourth pillar of Artificial Intelligence, where the other three are classic AI, modern AI, and humanized computing. The talk will also briefly introduce the new IEEE AI Academy to be launched in 2021.



Dr. Phillip C.-Y. Sheu is currently a professor of EECS, Computer Science and Biomedical Engineering at the University of California, Irvine. He received his Ph.D. and M. S. degrees from the University of California at Berkeley in Electrical Engineering and Computer Science, and B.S. degree from the National Taiwan University in Electrical Engineering.

A fellow of IEEE, Sheu currently is active in research related to semantic computing, robotic computing, artificial intelligence, biomedical computing and multimedia computing. He has published two books: *Intelligent Robotic Planning Systems*; and *Software Engineering and Environment - An Object-Oriented Perspective*; and he is a co-editor of *Semantic Computing* (IEEE Press/Wiley). He also has published extensively in object-relational data and knowledge engineering. Sheu is the founder of the Institute for Semantic Computing (ISC), the IEEE International Conferences of Semantic Computing (ICSC), Artificial Intelligence for Industries (ai4i), Transdisciplinary AI (TransAI), and the Computer Society Technical Committee on Semantic Computing (TCSEM). He is the founding editor-in-chief of the *International Journal of Semantic Computing* (IJSC) and the *Encyclopedia with Semantic Computing and Robotic Intelligence* (ESCRI). He is a co-founder of the IEEE International Conferences on Artificial Intelligence and Virtual Reality (AIVR), Multimedia Big Data (BigMM), Robotic Computing (IRC), and Artificial Intelligence and Knowledge Engineering (AIKE). He is also the inaugural educator-in-chief for the IEEE AI Academy to be launched in 2021.