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US NEURAL NETWORK EXPERTS COMING TO READ YOUR MIND

How does the brain rapidly learn new facts without unselectively forgetting facts that are already known? Can computer responds to changing environments like the brain? How do scientists apply the computational synthesis of brain reactions to technology? Two eminent professors from the department of Cognitive and Neural Systems at Boston University, Professor Stephen Grossberg and Professor Gail Carpenter, will answer the questions in their public lectures to be delivered next week while they are visiting the Engineering Faculty of The Chinese University as Wei Lun Visiting Professors.

A pioneer in the Adaptive Resonance Theory (ART) and founder of the International Neural Network Society (INNS), Professor Grossberg has developed a number of fundamental principles, mechanisms and architectures that form the foundation for contemporary neural network research.

Professor Grossberg's research focuses on the design of mathematical models imitating the cognitive activities of the brain. Mechanisms are derived to adapt successfully in real time to unexpected environmental changes like the neural system. These models have been used to analyse and predict a wide range of interdisciplinary data about mind and brain and to suggest novel architectures for technological applications.

In recognition of his outstanding contribution to neural network, Professor Grossberg has been awarded the 1991 IEEE Neural Network Pioneer Award, the 1992 INNS Leadership Award, and the 1992 Thinking Technology Award of the Boston Computer Society.

Professor Gail Carpenter is a leading architect of ART family of architectures for fast learning, pattern recognition and prediction of nonstationary databases. These systems are applicable to medical database diagnosis, remote sensing, automatic target recognition and control of nuclear power plants and mobile robots.

Professor Carpenter will talk on "A Brief History of Neural Networks" on February 20 to trace error-based neural network learning systems, from the perception to back propagation, and match-based learning systems, from the learning matrix to adaptive resonance networks.

Professor Grossberg's lecture entitled "How Does the Brian Learn to Recognize Objects?" will be held on February 23. ART architectures from neural networks, expert production systems and fuzzy logic will be introduced to explain a variety of facts about human learning.

Both public lectures will begin at 4:30 pm at the Auditorium, Ho Sin Hang Engineering Building in The Chinese University. All are welcome.

Recently the Department of Computer Science at the Chinese University has been very active in the studies on neural networks. Among the many pioneers in the field who have visited and lectured at the Department in the last two years include Prof Teuvo Kohonen from Helsinki University of Technology; and the father of computational vision, Professor Tomaso Poggio from MIT. The visit of Professor Grossberg and Professor Carpenter will further stimulate the neural network research in The Chinese University.

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