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Professors point to new IT directions

MIT scholars hope to introduce artificial intelligence to Taiwan

By Amber Wang (staff reporter)

Professors from U.S. research institution Massachusetts Institute of Technology will introduce the latest R&D trend in information technology today at a Taipei symposium. The event organizer Epoch Foundation, a long-time collaborator with MIT, hopes to bring in state-of-the-art computer and artificial intelligence technologies to local IT industries and academia.

The symposium entitled "New Directions in Information Technology: Understanding the new world of Information 2001" will feature seven speakers from MIT's Lab for Computer Science and Artificial Intelligence Lab to present results from "Oxygen," an international research project MIT launched in 1999 with six leading hi-tech companies, including Taiwan's Acer and Delta Electronics-both Epoch donator companies.

"After the symposium, Delta Electronics will demonstrate the technology, which is originally in English, then Delta will demonstrate the Chinese version," noted LCS Deputy Director Victor Zue during yesterday's pre-symposium press conference.

Prof. Leslie Pack Kaelbling, deputy director of AI Lab, spoke of her experiments in reinforcing robots to learn from experience. "I am interested in systems that can adapt to their environment; that can learn from their experiences in order to perform better. If we can make systems that can adapt to their environments, we might be able to create a search engine that can learn your preferences for sites on the web, or a house that can learn your behavioral patterns, or a robot vacuum cleaner that can learn your floor plan.

"In order to build systems like this, we need a complex combination of engineering and learning. We have to understand what parts and abilities of the systems to build upon and how the system should get its information to learn from," explained Kaelbling. "Our goal is to build a flexible adapted system and in the process minimize human programming efforts so it's not too hard to train the system to do what you want it to do."

Breakthroughs in computer graphic techniques will also be presented at the symposium. Prof. Leonard McMillan will introduce image-based rendering which he called "a new technology which will be the next revolution in computer graphics."

“This new technology hopes to move away from traditional models we’ve used for the past 25 years into a new paradigm in which we use photographs of the underlying representation for the images that we want to render,” explained Prof. McMillan, adding that image-based rendering has been quite successful in its 5-year development as evidenced in the movie “Matrix,” which was famous for its visual effects.

In addition, MIT professors will introduce energy efficient microprocessors which can be applied to all kinds of systems such as cell phones, PDAs and lap top computers, overlay networks, which is a layer of new networks atop the existing Internet for more multimedia applications, as well as visual-based perceptual user interface and computer speech systems.

Epoch’s Executive Director Paul Hsu said at a press conference that Epoch hopes to act as a “window” for local industries, academia and students to see through and learn the most up-to-date trends, concepts and opportunities from the two MIT labs.

He added that Epoch’s donator companies, which consist of 20 leading corporations, have business operations throughout Asia so that the foundations could serve as an integrator of resources and a “window” for MIT to see Asia’s developments.