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IIT-K teachers discuss simulated evolution

TIMES NEWS NETWORK

Kanpur: Indian Institute of Technology, Kanpur is hosting an international conference on 'Simulated Evolution and Learning' (SEAL-2010). The conference began at institute campus, here on Wednesday.

On Wednesday, SEAL was inaugurated by Prof Sanjay G Dhande, director, IIT, Kanpur. The conference was attended by Prof M P Kapoor, former professor of civil engineering department, IIT-K; Prof Narendra Karmarkar, Laboratory of Computational Mathematics; Prof Kalyanmoy Deb, professor of mechanical engineering, IIT-K, among others.

The conference focuses on evolution and learning as two fundamental forms of adaptation and explores



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these two forms of adaptation and their roles and interactions in adaptive systems. The other major theme of the conference was optimisation problem solving by evolutionary approaches or hybrid evolutionary approaches. The topics of interest in this conference include evolutionary learning, evolutionary optimisation, hybrid learning etc.

The conference featured three distinguished keynote speakers — Prof Narendra Karmarkar, Prof Manindra Agarwal and Prof Toshio Fukuda. Prof Agarwal's talk on 'Primes in P' provided a much-improved version of his celebrated and ground-breaking, 2002 work on polynomial time algorithm for testing prime numbers. Prof Toshio Fukuda talk on 'Intelligent Robot for Multi-mode Locomotion' showcased how multiple locomotions adopted by animals can be mimicked in developing highly robust robots for performing different tasks.

Later, an industrial panel discussion was also organised. The panel members discussed the various aspects of optimisation and learning methods and their potential applications in industries. The participants of the conference had come from various parts of the world, including Indian researchers and practitioners from various corners of the country.

'Simulated Evolution and Learning' is eighth such event in a series. SEAL is a prestigious international conference series in evolutionary optimisation and machine learning. This biennial event was started in Seoul, South Korea in 1996 and thereafter, was held in Canberra, Australia, in 1998; Nagoya, Japan, in 2000; Singapore in 2002; Busan, South Korea, in 2004; Hefei, China in 2006; and Melbourne, Australia in 2008.

Gen Next in...

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Elaborating on SEAL, he said it was a prestigious international conference series in evolutionary optimization and machine learning. This biennial event started in Seoul in 1966 and was thereafter held in Canberra in1998, in Japan in 2000, in Singapore in 2002, in South Korea in2004, in China in 2006 and in Australia in 2008, he added. The eighth conference was being held in India, he said.

Delegates from a dozen countries including China, USA, UK, Germany, France, Israel, Belgium, Singapore, Korea, Poland, Netherland and other counties are participating in the conference.

Dr Deb also said SEAL-2010 received 141 research papers from thirty countries.

The conference featured three distinguished keynote speakers including Prof Narendra Karmarkar, Prof Manindra Agrawal and Prof Toshio Fukdas, he added.

Earlier, director of IIT-K Dr Sanjay G Dhande inaugurated the conference.

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Gen Next in machines due soon

ARTIFICIAL learning machines expected to change production scenario

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KANPUR: Now, mechanisation is also due to witness a sea change.

A whole new generation of machines called *artificial learning machines* are on the anvil. These machines will change the production and designing scenario in the industrial domain.

About 95 scientists from India and abroad are participating in the four-day international conference on *Simulated Evolution and Learning* (SEAL-2010) at the Indian Institute of Technology (IIT-K), which began on Wednesday. These scientists will discuss the systems for developing new generation machines for production. The conference will conclude on December 4.

THE ALMS WOULD PROVE A BOON FOR APPLIED INDUSTRIES AS THEY WOULD CUT PRODUCTION COSTS

Convener of the conference, Dr Kalyanmoy Deb, a professor in the department of mechanical engineering, said that scientists at the IIT-K had been working for over one decade in developing machines with "artificial learning".

Dr Deb said that the machines underway would have "brain created memory" and they would perform all scheduled functions on their own without the intervention of humans, in ensuring the required production.

The artificial learning machines (ALMs) would prove a boon for applied industries as they would cut production costs and ensure quality product in the required quantity with the least chances of variations in specifications, he said.

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