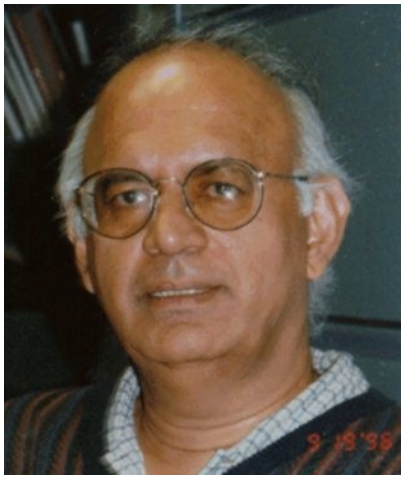
IIT Bombay is organising an Institute Lecture on Tuesday, September 13, 2011. The details are as follows:



Speaker **Prof. B. Chandrasekharan**
Professor Emeritus,
Senior Research Scientist and Director
AI Research Laboratory ,
Department of Computer Science & Engineering
Ohio State University

Title	:	**Diagrammatic Reasoning – Giving Perception Its Due in Thinking**
Day & Date	:	Tuesday, September 13, 2011
Time	:	5.15 p.m.
Venue	:	Lecture Hall No. 22, Victor Menezes Convention Centre

All are invited.

Abstract: Artificial Intelligence (AI) and cognitive science by and large subscribe to the "Language of Thought" hypothesis, which treats thinking as taking place on a representational substrate made up expressions composed of symbolic predicates. Thus, in much AI work on problem solving as goal-directed reasoning, goals, knowledge, and problem states are all taken to be such representations. On the other hand, phenomenological accounts of our own thought reveal that the cognitive state is multi-modal: In addition to the linguistic component, we also experience, as part of our cognitive state, perceptual images in different modalities. Diagrammatic representations are often a significant component of such cognitive states, and play a role in problem solving. External representations in the form of diagrams are ubiquitous in modern cultures. In this talk, Prof. Chandrasekharan describes a bi-modal architecture for problem solving in which diagrams and predicate symbolic representations are co-equal representational modes. Problem solving proceeds opportunistically – whichever modality can solve a subgoal makes its contribution at each cycle. A set of perceptual routines recognize emergent objects and evaluate a set of generic spatial relations between objects in a diagram; and a set of action routines create or modify the diagram in the service of problem solving goals. The work on diagrammatic representations suggests what a more fully developed multi-modal cognitive architecture would look like.

About the Speaker: Prof. B. Chandrasekaran is Professor Emeritus, Senior Research Scientist and Director of the Laboratory for AI Research in the Department of Computer & Information Science at Ohio State University. His major research activities have been in knowledge-based reasoning (especially causal understanding as applied to design and diagnosis), image-based reasoning, architecture of mind, and cognitive science. His work on generic tasks in knowledge-based systems is among the most heavily cited in recent research in the area of knowledge-based systems, as is his work on engineering design and functional reasoning. His current focus is on causal understanding and use of images in problem solving. Prof. Chandrasekaran was Editor-in-Chief of IEEE Expert from 1990 to 1994. He co-edited Diagrammatic Reasoning: Cognitive and Computational Perspectives (AAAI Press/ The MIT Press, 1995). From July 2001-Dec 2009, he was part of the US Army Research Laboratories Collaborative Technology Alliance on Advanced Decision Architectures, which supported his group's research on diagrammatic reasoning, decision architectures and information fusion. He has been elected Fellow of IEEE, AAAI and ACM.