Colorado State University's Information Science and Technology Center (ISTeC)

presents <u>two</u> lectures by

Dr. Avi Kak

Professor of Electrical and Computer Engineering
Purdue University

ISTeC Distinguished Lecture

in conjunction with the
Electrical and Computer Engineering Department and
Computer Science Department Seminar Series

"Why Robots Will Never Have Sex"

Monday, April 23, 2007
Reception: 4:00 p.m.
Lecture: 4:10 – 5:00 p.m.
Wagar Building Room 133

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Electrical and Computer Engineering Department Seminar

sponsored by ISTeC

"Camera Sensor Networks"

Monday, April 23, 2007
Lecture: 11:00 a.m – noon
Engineering Building Room D104

ABSTRACTS

"Why Robots Will Never Have Sex"

Despite all the ambiguities associated with our understanding of "intelligence," many futurists would have you believe that the day is fast approaching when the machines will be far more intelligent than humans. Some of wilder projections made by such individuals include scenarios in which robots take over the world and enslave the humans. The goal of my talk will be to point to the self-limiting nature of rationality and thus also the self-limiting nature of any intelligence frameworks based on rationality. Rational frameworks for reasoning, including those that take uncertainty into account, are closed systems of mutually-consistent formulas that are antithetical to what it means to be a human. So if the machines of the future will never be human-like in their thinking abilities, what will they be? Is there an end-point in the evolution of robotic intelligence (that unlike human intelligence is easily quantifiable). To answer this question, I will focus on sensory intelligence for the machines of the future. In particular, I will present examples of the progress that has been in robotic vision. While this progress has certainly made robotic vision useful for many industrial and societal tasks, in and of itself the robotic vision systems are merely encodings of the solutions produced by the human mind for solving specific and extremely narrowly defined problems.

That brings me to the title of this talk. While obviously a cheap hook, it is nevertheless intended to convey the possibility that it is our emotions, our passions, our innate desires --- all ingredients of our sexuality -- that are the defining elements of our consciousness and, through consciousness, our intelligence.

"Camera Sensor Networks"

A traditional "multiple" camera system for robotic vision applications consists typically of two or three cameras that are time-synchronized and connected to a single host computer. Recently there has been much interest in the development of large networks of cameras where each camera is equipped with wireless communications. The cameras in such networks are battery powered and possess limited local computing capabilities. The traditional multi-camera algorithms that are designed to employ centralized processing with unlimited energy can no longer be used in such camera networks. This talk will present several on-going projects on distributed and collaborative computer vision with wired and wireless camera networks.

SPEAKER BIOGRAPHY

Avinash Kak is a Professor of Electrical and Computer Engineering at Purdue University. His research and teaching include sensor networks, computer vision, robotics, and high-level computer languages. At this time, he is spearheading a large research effort in camera-based sensor networks for habitats of the future. His latest book "Programming with Objects," published by John Wiley and Sons in 2003, is used by a number of leading universities as a text on object-oriented programming. His forthcoming book "Scripting with Objects" focuses on object-oriented scripting. These are two of the three books for an "Objects Trilogy" he is creating. The last, expected to be finished sometime in 2008, will be titled "Designing with Objects." His coauthored book "Principles of Computerized Tomographic Imaging" was republished as a Classic in Applied Mathematics by SIAM (Society of Industrial and Applied Mathematics). His other co-authored book "Digital Picture Processing" is also considered by many to be a classic in computer vision and image processing.

To arrange a meeting with the speaker, please contact MaryAnn Stroub at (970) 491-2708
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