

**CENTER FOR SOFT COMPUTING RESEARCH  
INDIAN STATISTICAL INSTITUTE**

**SEMINAR NOTICE**

**Title:           Balance control in human and humanoid robots**

**Speaker:       Ambarish Goswami**  
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Abstract:

Despite years of research, gait stability and balance in human and humanoid robots remain an area of active interest -- and confusion. Why is it that something healthy human beings do effortlessly is so difficult to understand and replicate in a machine? Why is there still no general consensus on a definition for stability? In this talk We will explore these issues in the context of reviewing the background of balance research in biped robots. We will discuss simple models and their ability to capture the essentials of complex dynamics. Efficient use of these simple models nevertheless needs deep understanding of the underlying dynamics. We will review some recent techniques of push recovery of humanoid robots.

Additionally, I will also describe research in our lab conducted by Dr. Rakesh Gupta: Problems of interest include Autonomous Decision Making for ASIMO as well as human robot conversation. A representative video will help illustrate the formulation of decision making as a Partially Observable Markov Decision Process (POMDP) and use of knowledge sources such as Wikipedia and Open Mind Indoor Common Sense in topic determination for conversation.

**All are cordially invited.**