

# Robert Stewart Distinguished Lecture 2006

Department of Computer Science

## Software Upgrades in Distributed Systems

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Thursday, 06 April 2006

3:30 pm

Alliant Energy Lee Liu Auditorium, Howe Hall



Upgrading the software of long – lived, highly – available distributed systems is difficult. It is not possible to upgrade all the nodes in a system at once since some nodes may be unavailable and halting the system for an upgrade is unacceptable. Instead, upgrades must happen gradually; and there may be long periods of time when different nodes run different software versions and need to communicate using incompatible protocols. This talk describes an infrastructure that makes it possible to upgrade distributed systems automatically while limiting service disruption. It also describes a methodology for upgrades including a new way to specify upgrades.

Professor Liskov is the Ford Professor of Engineering at MIT. She is a member of the National Academy of Engineering, a fellow of the American Academy of Arts and Sciences and a fellow of the ACM. She received the IEEE Von Neumann medal in 2004, the lifetime achievement award from the Society of Women Engineers in 1996, and **in 2003, was named one of the 50 most important women in science by Discover Magazine**. Her research interests include distributed systems, replication algorithms to provide fault – tolerance, programming methodology and programming languages. Her current research projects include Byzantine – fault – tolerant storage systems, peer – to – peer computing and support for automatic deployment of software upgrades in large – scale distributed systems.

This lecture is part of the

*Distinguished Women in Mathematical Sciences Lecture Series*

funded by Iowa State University's

*Women's Enrichment Fund Mini – Grant Program.*

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