Course C13
An Introduction to Human-Robot Interaction Design and Evaluation
2 units

Instructor: Jean Scholtz, Pacific Northwest National Laboratory

Benefits:
The objective of this course is to provide experienced HCI researchers and practitioners with an overview of a new area: human-robot interaction (HRI). The course will introduce the types of robots and the challenges associated with user interfaces for various robot types. The evaluation segment will describe current efforts in usability and utility evaluation and outline areas where modification of traditional HCI methods are needed for HRI evaluation.

Origins:
This course has been modified from a full day tutorial taught at CHI 2004,CHI 2005, and IUI 2006.

Features:
- difference between HCI and HRI
- overview of different types of robots and different applications
- robot behaviors and challenges for interface design including remote operations and levels of autonomy
- discussion of different types of robot applications and the implications for user interface design
- discussion of different types of interaction modalities
- guidelines for HRI
- opportunity to critique one or more user interfaces
- discussion of metrics applicable to HRI
- examples of application of different HCI evaluation techniques applied to HRI

Intended Audience:
The audience should be knowledgeable in HCI evaluation methods (usability testing, user modeling, field studies, etc.). The design segment of the course will outline the challenges associated with designing user interfaces and interactions for robots. This material is essential to understand in order to design effective evaluations.

Presentation Style:
Lecture with illustrating videos, simulation demonstration, small group breakouts.

Instructor's Background:
Dr. Scholtz has recently retired from the National Institute of Standards and Technology. She now works part time for the Pacific Northwest National Laboratory. Her work has, for the past 7 years, been in the evaluation of users interacting with intelligent systems. She has worked with urban search and rescue robots, robots for space exploration, and explosive ordnance disposal robots. In addition she has headed a number of projects

doing user-centered evaluations of software for the intelligence community. Dr. Scholtz is active in the CHI community, serving on the board of Interactions and working on many CHI conference committees. She was the treasurer of SIGCHI for several terms. She is on the editorial board of *International Journal of Human-Computer Studies* and *Interacting with Computers*. She is a certified Human Factors Professional.