

**Course C19**  
**Information Foraging Theory**  
2 units

*Instructor:* Peter Pirolli, Palo Alto Research Center (PARC)

*Benefits:*

This course is about Information Foraging Theory which aims to explain and predict how people will best shape themselves to their information environments, and how information environments can best be shaped to people. The approach involves a kind of reverse engineering in which the analyst asks (a) what is the nature of the task and information environments, (b) why is a given system a good solution to the problem, and (c) how is that solution realized (approximated) by mechanism. Typically, the key steps in developing a model of information foraging involve: (a) a rational analysis of the task and information environment (often drawing on optimal foraging theory from biology) and (b) a computational production system model of the cognitive structure of task. This course provides an introduction and overview of Information Foraging Theory, detailed examples, an overview of applications of the theory to the formulation of usability guidelines and cognitive engineering models, and discussion of new opportunities for research. Participants should have sufficient background by the end of the course to perform exercise analyses in information foraging and to have gained resources for research, design and development, and teaching.

*Origins:*

Versions of this course have been presented as CHI Tutorials, at the Nielsen-Norman User Experience, and at university summer workshops on HCI.

*Features:*

- \* Information Foraging Theory as a way of understanding information-intensive work.
- \* Concrete illustration of scientific analyses and models of user behavior on the Web.
- \* Overview of applications to practice including usability guidelines, engineering models, and user interface designs.
- \* Extending the framework to exploratory search systems, social foraging, and other emerging phenomena.

*Intended Audience:*

The course is aimed primarily at researchers, although practitioners will definitely be welcomed to participate and learn from the course. It is assumed that participants will not faint if confronted with a few equations or raw code samples during the course. Previous versions of the course have been delivered to both research-oriented audiences (e.g., academic researchers) and user interface/user experience practitioners.

*Presentation Style:*

Lectures, demos, and Q&A segments interspersed.

*Instructor's Background:*

Peter Pirolli is a Research Fellow in the User Interface Research Area at PARC. He received his B.Sc. in Psychology and Anthropology from Trent University, Canada. He earned his M.S. and Ph.D. in Cognitive Psychology from Carnegie Mellon University where he developed computational models of students learning to program and helped develop an intelligent tutoring system for programming. He became a Professor in the School of Education at the University of California, Berkeley, where he was also Associate Director of the Cognitive Science Program. He is a Fellow of the CHI Academy, Fellow of the American Association for the Advancement of Science, and a Fellow of the National Academy of Education. He joined PARC in 1991 where he is engaged in studies of augmented social cognition, human-information interaction, information foraging theory, and the development of new user interface technologies.