PETER WALL INSTITUTE PRESENTS: INTERNATIONAL VISITING RESEARCH SCHOLAR

COLIN WARE - VISUAL THINKING ALGORITHMS

**Thursday
March 7, 2013
3:30 - 5:00pm**

**Hugh Dempster Pavillion,
Room 110**

**University of British Columbia,
6245 Agronomy Road,
Vancouver, BC**

Colin Ware is best known for his work applying perceptual theory to the design of data visualizations. He has published more than 100 articles in the field and his book Visual Thinking for Design (Edition III) has become the standard reference in the field. He combines interests in both basic and applied research and he has advanced degrees in both computer science (MMath, Waterloo) and in the psychology of perception (PhD,Toronto). Ware also likes to build useful visualization systems. The Fledermaus visualization software, widely used in ocean mapping applications was initially developed by him and a team of graduate students. His TrackPlot software is being used to analyze data from tagged marine mammals. His ocean current visualization is in the Smithsonian Museum of Natural History in Washington, DC. He is Director of the Data Visualization Research Lab which is part of the Center for Coastal and Ocean Mapping at the University of New Hampshire.

In the creative process of drawing a sketch mental additions are first tested internally then externalized to the paper; the information is distributed, some is held on the paper and some is held as a mental image. Today, most serious cognitive work is done with computer tools, not paper which makes it even more interactive and distributed, some of the action occurring in the brain, and some in the computer. In this talk I will introduce visual thinking algorithms as a way of describing the dialogue between humans and computers involved in visual thinking. These algorithms are described using simple pseudo-code and are intended to support design decisions regarding which visualization methods to use. Key components of visual thinking algorithms are visual queries and epistemic actions. Visual queries are aspects of a problem that have been transformed so progress towards a solution can be accomplished by means of a visual pattern search. Examples of visual thinking will be given, including design sketching, generalized fisheye views and reasoning with a social network diagram.

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