KEYNOTE TALK
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Nearly a theory of visualization

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Abstract

Information visualization is about transforming non-visual information into visual information, to guide humans to draw explanatory or exploratory inferences.   We present the hypothesis that a picture is an inductive hypothesis about some set of foundation data.   Furthermore, we argue that a theory of visualization should guide the composition of transformations to produce a picture that encodes some intended inferential bias when viewed by a human. Components of that theory should help articulate what should be preserved in a picture, what aspects of human visual cognition are best exploited in preferred inference, and how alternative transformations can be evaluated with respect to intended inference.

Speaker Bio-Sketch: Randy Goebel is a professor of computing science at the University of Alberta in Edmonton, Alberta, Canada. He is currently a principle investigator in the Alberta Innovates Centre for Machine Learning, and has been involved in a broad variety of research areas, from inductive reasoning, optimization, natural language processing, web mining, systems biology, and visualization, in both academic and industrial research projects in Canada, Japan, Germany, Australia, Malaysia, and China.   He has held academic appointments at the universities of Waterloo, Alberta, Tokyo, Multimedia University (Malaysia), and Hokkaido University, and has worked at a variety of research institutes including ICOT (Japan) and DFKI (Germany).