Visual Analytics: a Grand Challenge in Science - Turning Information Overload into the Opportunity of the Decade

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Abstract:
We are in the midst of a major change in the requirements for visualization technologies. The issues posed by information overload goes beyond what is provided by traditional scientific and information visualization. These new requirements will drive a emerging research and development agenda including aspects from both scientific and information visualization with a published starting point developed by a team of 40 renowned scientists and hopeful end users: *Illuminating the Path: the Research and Development Agenda for Visual Analytics, http://nvac.pnl.gov/*. This agenda was one of the first major deliverables of the newly formed National Visualization an Analytics Center, The objectives are to bring the next generation visual analytics technology and next generation talents to missions of homeland security. The regional centers led by universities are critical parts of this effort with emphasis on interdisciplinary talents, key partnerships with homeland security and health departments, education, and outstanding research teams which makes PURVAC a emerging opportunity.

Bio:
Jim Thomas is a PNNL Lab Fellow and Chief Scientist for Computational and Information Sciences at Battelle Pacific Northwest National Laboratory with over 30 years of experience. He now is Director of a Department of Homeland Security founded National Visualization and Analytics Center. His responsibilities at Battelle include establishing investment directions for Information Technology (IT), representing IT inside and outside the lab, leading major technology initiatives, mentoring staff, and being a PI on several major programs. He specializes in the research, design, and implementation of innovative information and scientific visualization, multimedia, and human computer interaction technology; however, he has a broad working knowledge of information technology. Some of the recent technologies developed have set a new stage for the visualization of masses of multimedia information sources with several publications, patents, with recent publications being widely referenced and re-printed. More recently he has led teams in text, numerical, image and video analysis for massive information spaces. He has received several international science awards including "Top 100 Scientific Innovators" (Science Digest) and twice the Research and Development's Industrial Research 100 Significant Scientific and Industry Accomplishments "Top 100 Innovators in Science and Industry". In addition, twice he was awarded the Federal Laboratories Consortium Technology Transfer Award for innovation in transferring research technology to industry and universities. In addition Thomas served as 2003 and 2004 IEEE Visualization Conference Co-Chair, Chair ACM SIGGRAPH 1987 –1992, 1998-2002 Editor-In-Chief for IEEE Computer Graphics and Applications, Founder of ACM User Interface Science and Technology Conference, and has over 120 publications and sets on several advisory boards.