Keynote

Visual Analytics' Differentiating Challenges

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Abstract

While less than five year old, visual analytics has become crucial to enabling insight and impacting a wide range of fields. Recently, many have discussed the differences between visualization and visual analytics and even if such a difference exists. Visual analytics could be considered the boundary-expanding adolescence of the field of visualization, the generational shift and evolution of visualization, or an entirely new field of science. History will be a much better judge of which view is most appropriate. A more fruitful analysis can be spent on examining the differentiating and evolving characteristics of visual analytics and the great research challenges that will transform and impact science, engineering, and society. Grand challenge problems in our world have created grand challenge research opportunities for visual analytics and require true transdisciplinary research for their solution.

In this talk, I will characterize the differentiating essentials of integrated, interactive advanced analytical and visualization environments and discuss the potential of visual analytics to dramatically transform scientific discovery, engineering development, medical research, business planning and management, public health, emergency response, and safety. Finally, I'll focus on the open challenges and opportunities for visual analytics.

Biographical Note

David Ebert is the Silicon Valley Professor of Electrical and Computer Engineering at Purdue University, a University Faculty Scholar, a Fellow of the IEEE, and Director of the Purdue University Visualization and Analytics Center (PURVAC), which leads the Visualization Science team of the Department of Homeland Security's Command Control and Interoperability Center of Excellence (VACCINE). He performs research in novel visualization techniques, visual analytics, volume rendering, information visualization, perceptually-based visualization, illustrative visualization, mobile graphics and visualization, and procedural abstraction of complex, massive data. Ebert has been very active in the visualization community, teaching courses, presenting papers, co-chairing many conference program committees, serving on the ACM SIGGRAPH Executive Committee, serving as Editor in Chief of IEEE Transactions on Visualization and Computer Graphics, serving as a member of the IEEE Computer Society's Publications Board, serving on the IEEE Computer Society Board of Governors, and successfully managing a large program of external funding to develop more effective methods for visually communicating information.