

The Good, the Bad, and the Beautiful: Interactive Data Visualization in a Big Data Era

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It's estimated that as much as 65% of the population are visual learners. To those many, visualization represents a critical step in formulating their understanding of data. However, there are numerous technical and human factor challenges that make visualization of large, complex data nontrivial. In this talk I will discuss how I, along with my collaborators, have been marrying what we loosely term 'computational analysis techniques', including statistical techniques, computational topology, etc., for data reduction with intuitive interactive visual layouts that enable answering specific questions one might have about their data. I will discuss both the benefits and risks of inherent in these approaches, as well as the general risks associated with poor visualization design choices. Finally, I will discuss my vision for the evolution of these techniques into a framework for the bidirectional communication of knowledge between humans and computers, empowering the future of data analysis.