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Visual analytics for big video data

With advancements in multimedia and data storage technologies and the ever-decreasing costs of hardware, our ability to generate and store evermore video and other multimedia data is unprecedented. YouTube, for example, has over 1 billion users. However, a very large gap remains between our ability to generate and store large collections of complex, time-dependent video and multimedia data and our ability to derive useful information and knowledge from it. Viewing video and multimedia as a data source, visual analytics exploits our most powerful sense, vision, in order to derive information, knowledge and gain insight into big multimedia data sets that record complicated and often time-dependent events. This talk presents a case study of state-of-the art visualization and visual analytics techniques applied to video multimedia in order to explore, analyze, and present video data. In this case, we show how glyph-based visualization can be used to convey the most important information and events from videos of rugby games. The talk showcases some of visualizations strengths, weaknesses, and, goals. We describe inter-disciplinary case-study based on rugby sports analytics, where visual analytics and visualization is used to address fundamental questions-the answers of which we hope to discover in various large, complex, and time-dependent multimedia data.

Biography

Robert S Laramée received a Bachelor's degree in Physics, cum laude, from the University of Massachusetts, Amherst (ZooMass). He received a Master's degree in Computer Science from the University of New Hampshire, Durham. He was awarded a PhD from Vienna University of Technology (Gruess Gott TUWien), Austria at the Institute of Computer Graphics and Algorithms in 2005. From 2001 to 2006, he was a Researcher at the VRVis Research Center and a Software Engineer at AVL in the Department of Advanced Simulation Technologies. Currently, he is an Associate Professor in Data Visualizaton at Swansea University (Prifysgol Cymru Abertawe), Wales in the Department of Computer Science (Adran Gwyddor Cyfrifiadur). His research interests are in the areas of big data visualization, visual analytics, and human-computer interaction. He has published more than 100 peer-reviewed papers in scientific conferences and journals and served as Conference Chair of EuroVis 2014, the premiere conference on data visualization in Europe.

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