Abstract

Lectures, panels, and symposia that explore issues at the intersection of art and visualization have become a recurring theme at visualization conferences. Since 2003 the U.S. National Science Foundation and the journal *Science* have sponsored an International Science and Engineering Visualization Challenge in which many of the winning entries exhibit noteworthy aesthetic qualities that may be considered artistic in nature. And inspirations from artistic movements and practice have stimulated visualization research, particularly in the application of non-photorealistic or expressive rendering techniques to visualization problems.

The confluence of art and visualization has a long history. Indeed, the Paleolithic artists who painted on the cave walls of southwest France may have been the first visualizers. Or was it vice versa? Either way, throughout the intervening millennia visual artists have become proficient at transforming information into representations that are designed to communicate and provoke. The challenge facing a viewer of art is how to decipher an image’s content and extract its meaning. This holds true for a viewer of visualizations as well.

Thus, the purpose of this tutorial is to introduce the fundamental skills for analyzing visual art that subsequently may be applied to scientific and information visualizations. It will offer an historical survey of the intersections of art and visualization with an emphasis on examples from contemporary artists, and provide an opportunity for participants to practice these skills within a gallery setting. To this end, the tutorial will be composed of two sessions. A morning session will focus on an historical survey, conceptual foundations, and skill acquisition. An afternoon session convening at The National Gallery of Art (Trafalgar Square), will allow course participants to test their analysis skills on a selection of the gallery’s paintings.

Level of Tutorial: Introductory

Biography

Frank Marchese is Professor of Computer Science at Pace University where he teaches courses in computer graphics, visualization, human-computer interaction, and software engineering. His research interests span scientific and information visualization; novel user interfaces for visualization; distributed and collaborative visualization; integration of visualization into
lifecycles for scientific research and software engineering; and the development of visualization systems at the intersection of art, science, and technology.

He is founder and Director of Pace’s Center for Advanced Media (CAM) and the Pace Digital Gallery, the latter of which is a collaboration between Pace University’s Seidenberg School of Computing and Department of Fine Arts. He has published widely in science, technology, and art; is editor of the conference proceedings entitled Understanding Images published by Springer-Verlag, and is co-chair of Information Visualization 2010 (IV’10).

Dr. Marchese has a Ph.D. in quantum chemistry from the University of Cincinnati and was a National Institutes of Health Postdoctoral Research Fellow specializing in the statistical mechanics of liquids. He has been twice awarded Pace’s School of Computing Excellence in Research Award, received the Kenan Award for Teaching Excellence, and been nominated for The Carnegie Foundation Teacher of the Year Award. In December 2008, he was awarded Pace University’s Faculty Award for Distinguished Service. He is currently a visiting scholar at New York University’s Institute of Fine Arts where he is studying museum curation, the relationship between text and image in medieval art, and the artistic origins of information visualization.