

Biomedical Computing and Visualization

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Abstract

Computational problems in biomedicine often require a researcher to apply diverse skills in confronting applications involving very large data sets, three-dimensional complex geometries, large-scale computing, scientific problem-solving environments, and large-scale visualization. In this presentation, I will provide examples of recent research in biomedical computing and visualization in cardiology (medical device design), neuroscience (epilepsy localization techniques and surgical planning), and imaging (new methods for interactive visualization of large-scale 3D MRI and CT volumes, and new methods for diffusion tensor imaging).

Biography

Professor Johnson directs the School of Computing, as well as the Scientific Computing and Imaging Institute at the University of Utah where he is a

Distinguished Professor of Computer Science. He also holds faculty appointments in the Departments of Physics and Bioengineering. His research interests are in the area of scientific computing. Particular interests include inverse and imaging problems, adaptive methods, problem solving environments, large scale computational problems in medicine, and scientific visualization. Professor Johnson was awarded a Young Investigator's (FIRST) Award from the NIH in 1992, the NSF National Young Investigator (NYI) Award in 1994, and the NSF Presidential Faculty Fellow (PFF) award from President Clinton in 1995. In 1996 he received a DOE Computational Science Award and in 1997 received the Par Excellence Award from the University of Utah Alumni Association and the Presidential Teaching Scholar Award. In 1999, Professor Johnson was Awarded the Governor's Medal for Science and Technology.