The representation of spatial data is an important issue in computer graphics, computer vision, geographic information systems, and robotics. A wide number of representations is currently in use. Recently, there has been much interest in hierarchical data structures such as quadtrees, octrees, R-trees, etc. The key advantage of these representations is that they provide a way to index into space. In fact, they are little more than multidimensional sorts. They are compact and depending on the nature of the spatial data they save space as well as time and also facilitate operations such as search. In this talk we give a brief overview of hierarchical spatial data structures and related research results. In addition we demonstrate the SAND Browser (found at http://www.cs.umd.edu/~brabec/sandjava) and the VASCO JAVA applet which illustrate these methods (found at http://www.cs.umd.edu/~hjs/quadtree/index.html).

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