

# Spatial Databases

Hanan Samet

University of Maryland, USA

**Abstract.** The ability to deal with spatial data is becoming increasingly important in applications in geographic information systems, computer vision, computer graphics, computer vision, image processing, solid modeling, robotics, and cartography. This manifests itself in the need to incorporate this data in existing database management systems.

This incorporation must result in the coexistence of the spatial data with the non-spatial data. The result is termed a spatial database. Spatial databases must deal with points, lines, rectangles, regions, surfaces, volumes, and other geometric data, as well as time and non-geometric data (known as attribute data). The implementation of spatial databases involves many issues including a choice among a number of different representations for the underlying data, as well as the types of queries to be supported,

In this tutorial we review some of the most recent representations and the type of operations that they are designed to support. We also discuss methods of integrating spatial and non-spatial data in conventional database management systems, as well as examine some existing spatial database systems.