



**The Hong Kong University of Science & Technology
Department of Computer Science and Engineering**



ACM (Hong Kong Chapter)

Seminar

“SPATIAL DATABASES AND GEOGRAPHIC INFORMATION SYSTEMS”

**by
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ABSTRACT

An introduction is given to the spatial database issues involved in the design of geographic information systems (GIS) from the perspective of a computer scientist. Some of the topics to be discussed include the nature of a GIS and the functionalities that are desired in such systems. Representation issues will also be reviewed. The emphasis will be on indexing methods as well as the integration of spatial and nonspatial data. Demos will be shown of the SAND Spatial Browser (<http://www.cs.umd.edu/~brabec/sandjava>) as well as the VASCO JAVA applet

(<http://www.cs.umd.edu/~hjs/quadtree/index.html>) which illustrate these ideas.

This seminar is co-supported by CSE of HKUST and ACM (Hong Kong Chapter)

Date: Monday, 19 October, 2009
Time: 4:00pm – 5:00pm
Venue: Lecture Theatre F (Leung Yat Sing Lecture Theatre, near lifts. 25/26)
The Hong Kong University of Science & Technology

****For enquiries, please call 2358 7008 (All are Welcome)****

Biography:

Hanan Samet received the B.S. degree in engineering from the University of California, Los Angeles, and the M.S. Degree in operations research and the M.S. and Ph.D. degrees in computer science from Stanford University, Stanford, CA. He is a Fellow of the IEEE, ACM, and IAPR (International Association for Pattern Recognition), and was also elected to the ACM Council in 1989-1991 where he served as the Capital Region Representative. He is the recipient of the 2009 UCGIS Research Award. He is currently a Science Foundation of Ireland (SFI) Walton Fellow at the Centre for Geocomputation at the National University of Ireland at Maynooth (NUIM).

In 1975 he joined the Computer Science Department at the University of Maryland, College Park, where he is now a Professor. He is a member of the Computer Vision Laboratory of the Center for Automation Research and also has an appointment in the University of Maryland Institute for Advanced Computer Studies. At the Computer Vision Laboratory he leads a number of research projects on the use of hierarchical data structures for geographic information systems. His research group has developed the QUILT system which is a GIS based on hierarchical spatial data structures such as quadtrees and octrees, the SAND system which integrates spatial and non-spatial data, the SAND Browser (<http://www.cs.umd.edu/~brabec/sandjava>) which enables browsing through a spatial database using a graphical user interface, the VASCO spatial indexing applet (found at <http://www.cs.umd.edu/~hjs/quadtrees/index.html>), and a symbolic image database system.

His research interests are data structures, computer graphics, geographic information systems, computer vision, robotics, and database management systems. He is the author of the recent book titled "Foundations of Multidimensional and Metric Data Structures" (<http://www.cs.umd.edu/~hjs/multidimensional-book-flyer.pdf>) published by Morgan-Kaufmann, an imprint of Elsevier, in 2006, and of the first two books on spatial data structures titled "Design and Analysis of Spatial Data Structures", and "Applications of Spatial Data Structures: Computer Graphics, Image Processing, and GIS", both published by Addison-Wesley in 1990. He was the co-general chair of the 15th ACM International Conference on Advances in Geographic Information Systems (ACMGIS'07) and the 16th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACMGIS'08). He is the founding chair of ACM SIGSPATIAL, and received best paper awards in the 2008 SIGMOD Conference, the 2008 SIGSPATIAL ACMGIS'08 Conference, and the 2007 Computers & Graphics Journal. His paper at the 2009 IEEE International Conference on Data Engineering (ICDE) was selected as one of the best papers for publication in the IEEE Transactions on Knowledge and Data Engineering.