Distinguished Speakers Seminar
Computer Science and Engineering

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University of Maryland

PLACE-BASED INFORMATION SYSTEMS: TEXTUAL LOCATION IDENTIFICATION AND VISUALIZATION

Abstract: In the web-based applications, the location data often corresponds to place names and is usually specified textually. However, textually specification is often ambiguous. In this talk we examine the extension of GIS concepts to textually specified location data and review search engines that we have developed to retrieve documents where the similarity criterion is not based solely on exact match of elements of the query string but instead also based on spatial proximity. Thus we want to take advantage of spatial synonyms so that, for example, a query seeking a rock concert in Arlington would be satisfied by a result finding a rock concert in Dallas or Fort Worth. This idea has been applied by us to develop the STEWARD (Spatio-Textual Extraction on the Web Aiding Retrieval of Documents) system for finding documents on website of the Department of Housing and Urban Development. The same ideas have also been adapted by us to collections of news articles as well as Twitter tweets resulting in the NewsStand and TwitterStand systems, respectively, which will be demonstrated along with the STEWARD system in conjunction with a discussion of some of The underlying issues that arose and the techniques used in their implementation. Future work involves applying these ideas to spreadsheet data.

About the speaker: Hanan Samet (http://www.cs.umd.edu/~hjs/) is a Professor of Computer Science at the University of Maryland, College Park and is a member of the Institute for Computer Studies. He is also a member of the Computer Vision Laboratory at the Center for Automation Research where he leads a number of research projects on the use of hierarchical data structures for database applications involving spatial data. He has a Ph.D from Stanford University. He is the author of the recent book "Foundations of Multidimensional and Metric Data Structures" published by Morgan-Kaufmann, San Francisco, CA, in 2006 (http://www.mkp.com/multidimensional), an award winner in the 2006 best book in Computer and Information Science competition of the Professional and Scholarly Publishers (PSP) Group of the American Publishers Association (AAP), 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" published by Addison-Wesley, Reading, MA, 1990. He is the Founding Editor-In-Chief of the ACM Transactions on Spatial Algorithms and System (TSAS), the founding chair of ACM SIGSPATIAL, a recipient of the 2009 UCGIS Research Award, 2011 ACM Paris Kanellakis Theory and Practice Award, the 2010 CMPS Board of Visitors Award at the University of Maryland, a Fellow of the ACM, IEEE, AAAS, and IAPR (International Association for Pattern Recognition), and an ACM Distinguished Speaker. He received best paper awards in the 2008 SIGMOD Conference, 2008 SIGSPATIAL ACMGIS'08 Conference, and the 2012 SIGSPATIAL MobiGIS'12 Workshop, and a best demo award at the 2011 SIGSPATIAL ACMGIS'11 Conference. 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.

Everyone is invited!