

Dynamic Data Replication Schemes for Mobile Ad-hoc Networks Based on Aperiodic Updates

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Refreshments at 2:30, Talk from 3:00-4:00

Traditional replication schemes are passive in nature, and rarely consider the characteristics of mobile environment. In this talk, I will present three dynamic data replication schemes for mobile ad-hoc networks. I propose replication algorithms by considering aperiodic updates and integrating user profiles consisting of mobile users' mobility schedules, access behavior and read/write patterns. These schemes actively reconfigure the replicas to adjust to the changes in user behavior and network status. I will present three replication algorithms and their performance evaluation in an environment where data items are updated aperiodically, and where frequency of access to each data objects from mobile hosts and the status of network connection are also considered. I will also talk about some new consistency measures in this new environment.

Biography: Sanjay Kumar Madria received his Ph.D. in Computer Science from Indian Institute of Technology, Delhi, India in 1995. He is an Assistant Professor, Department of Computer Science, at University of Missouri-Rolla, USA. Earlier, he was a visiting Professor at Purdue University, West Lafayette. He has published papers in leading journals and conferences in the areas of web warehousing, mobile databases, nested transaction management and performance issues. He is a co-author of a book "Web Data Management: A Warehouse Approach" published by Springer in 2003. He guest-edited WWW Journal and Data and Knowledge Engineering Special Issues on Web data management and Data warehousing. He has chaired conferences and workshops in the area of web and internet computing. His research has been supported by NSF, DOE, and UM research board grants. He is an IEEE senior member.